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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

June 4, 2020

Mr. Peter Lisichenko, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: 68HE0319D0004
TD No: TO-0032-0040
DC No: STARTV-01-F-0076
SUBJECT: FINAL REMOVAL ASSESSMENT SAMPLING REPORT
738 UPPER MOUNTAIN ROAD SITE
LEWISTON, NIAGARA COUNTY, NEW YORK

Dear Mr. Lisichenko,

Enclosed please find the Final Removal Assessment Sampling Report which summarizes the sampling event conducted by the U.S. Environmental Protection Agency, Region II (EPA) with the support of Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) at the 738 Upper Mountain Road Site (the Site) located in Lewiston, Niagara County, New York. The sampling event was performed as part of Removal Assessment activities on October 22 through 24, 2019.

If you have any questions or comments, please contact me at (732) 585-4413.

Sincerely,

WESTON SOLUTIONS, INC.

Bernard Nwosu
START V Site Project Manager

Enclosure
cc: TDD File: TO-0032-0040

FINAL REMOVAL ASSESSMENT SAMPLING REPORT

738 UPPER MOUNTAIN ROAD SITE

Lewiston, Niagara County, New York

Site Code: A23N
CERCLIS Code: NYN000206697

Prepared by:

Superfund Technical Assessment & Response Team V
Weston Solutions, Inc.
Federal East Division
Edison, New Jersey 08837

Prepared for:

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Superfund and Emergency Management Division
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DC No: STARTV-01-D-0104
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June 2020

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1.0 Introduction

On October 22 through 24, 2019, the U.S. Environmental Protection Agency, Region II (EPA) Superfund and Emergency Management Division (SEMD) with the support of Weston Solutions Inc., Superfund Technical Assessment & Response Team V (START V) performed clean fill sampling at an off-site fill material vendor facility, disposal soil sampling in an area of concern (AOC) at the 738 Upper Mountain Road Site (the Site), and identified the boundaries of the Site and adjacent properties. The clean fill and disposal soil samples collected during the sampling events were submitted to the assigned laboratories for analyses.

1.1 Site Location and Description

The Site is situated at 738 Upper Mountain Road in Lewiston, New York and the geographic coordinates are 43.15553, -79.02245. The Site consists of a small AOC with radionuclide contamination approximately 1,493 square feet (ft^2), and is located on the vacant, approximately 10.2 acre parcel 115.08-1-27 owned by Talarico Bros. Building Corp (TBBC). The AOC is located at the entrance of the driveway currently utilized by the 738 Upper Mountain Road residence although the driveway was historically used as an access road to the vacant TBBC property. The residence is on a separate property from the AOC. The Site is bordered to the north by Upper Mountain Road, residential properties, and a further wooded area; to the east and west by residential properties; and to the south by a wooded area.

Refer to Attachment A, Figure 1: Site Location Map

1.2 Site History and Background

In July 1985, members of the Radiological Survey Activities (RASA) group at Oak Ridge National Laboratory (ORNL) performed a radiological survey of 738 Upper Mountain Road and documented a maximum gamma exposure rate of 710 microroentgens per hour (µR/hr). The area where this reading was collected is approximately 10 feet wide by 59 feet in length along a ditch and gravel residential driveway. The survey showed that the 738 Upper Mountain Road anomaly is associated with the gravel driveway that contained a phosphate slag material. This rocky-slag waste material was used for bedding under asphalt surfaces and in general gravel applications at the Site and 61 other locations in the Niagara Falls area identified by ORNL.

Biased surface soil samples collected in conjunction with the study indicated the presence of radium (Ra)-226, uranium (U)-238, and thorium (Th)-232 at the Site. The subsequent November 1986 report stated that all the contaminated soil and rock samples collected had approximately equal concentrations of Ra-226 and U-238, which suggests that the rocks probably originated from a singular source. The origin of the thorium-bearing material was unknown; the report postulated that its source was from some type of mineral extraction activity in the Niagara Falls area. The report stated that the 738 Upper Mountain Road anomaly was not related to materials connected with Niagara Falls Storage Site (NFSS), including materials that were transported to NFSS.

During a reconnaissance performed by the New York State Department of Health (NYSDOH) and New York State Department of Environmental Conservation (NYSDEC) on July 9, 2013,

screening activities showed radiation levels at 300 µR/hr with a hand-held pressurized ion chamber (PIC) and 105,000 to 110,000 counts per minute (cpm) with a sodium iodide (NaI) 2x2 scintillation detector; the singular reading was taken at the end of the driveway adjacent to Upper Mountain Road.

On December 12, 2013, Weston Solutions, Inc., Site Assessment Team (SAT), currently START V, collected a total of nine soil samples and two slag samples from the Site. At each sample location, soil samples were collected directly beneath slag material; at locations where a radioactive layer was not present the soil sample was collected at the equivalent depth interval. The slag samples consisted of pulverized silty sand with rocks, cobbles, and gravel (*i.e.*, radioactive waste material mixture) rather than singular pieces of slag. The soil and slag samples, and aqueous rinsate blank, were analyzed for target analyte list (TAL) metals, including mercury; isotopic thorium, isotopic uranium, Ra-226, and Ra-228 by alpha spectroscopy; and other radioisotopes by gamma spectroscopy. Analytical results indicated concentrations of radionuclides found in the slag and soil to be significantly higher than at background conditions.

On May 1 and 2, 2014, SAT collected radon and thoron concentration measurements from locations on and in the vicinity of the Site. The radon and thoron measurements were collected at heights of one meter above the ground surface. During the May 2014 air monitoring event, background radon concentrations were measured at 0.16 +/- 0.13 picocuries per liter (pCi/L) (to account for maximum background concentrations, the uncertainty value is added to the background measurement for an adjusted concentration of 0.29 pCi/L) during the morning hours on May 2, 2014 and an adjusted value of 0.12 pCi/L during the afternoon hours on May 1, 2014. Background thoron concentrations were calculated to be 0.060 pCi/L (adjusted concentration) during the morning hours on May 2, 2014 and an adjusted value of 0.15 pCi/L during the afternoon hours on May 1, 2014. There were no radon or thoron concentrations that exceeded the site-specific background, nor were there any adjusted concentrations that equaled or exceeded a value two standard deviations above the mean site-specific background concentrations for these radionuclides in ambient air.

On October 25, 2016, EPA and Weston Solutions, Inc., Removal Support Team 3 (RST 3), currently START V, conducted radiological survey inside the one residence located in proximity to the AOC and exterior areas of the Site. A hand-held NaI 3x3 scintillator attached to a Ludlum-2241 gamma meter was utilized to conduct radiological survey in the residence, and an all-terrain vehicle (ATV) with a Ludlum-2241 and NaI 3x3 scintillator setup connected to a wireless network-based communication system was utilized to conduct mobile ground radiological survey throughout the Site and areas surrounding the residence. Gamma readings collected within the residence were at background levels (10 to 12 µR/hr). Exterior gamma reading generally ranged from background to less than three time (3x) background except at a small area of the driveway entrance currently utilized by the 738 Upper Mountain Road residence where gamma readings were as high as 462.2 µR/hr.

On November 18, 2016, EPA and RST 3 continued Removal Assessment activities at the Site. Based on radiological survey measurements collected during the October 2016 Removal Assessment event, test pits were advanced on-site to depths of 2 feet below ground surface (bgs) at four locations selected by EPA. A total of 17 heterogeneous samples of soil/slag/rock, including

quality assurance/quality control (QA/QC) samples, were collected from the side walls of each test pit at 6 inch intervals from 0 to 6, 6 to 12, 12 to 18, 18 to 24 inches bgs.

In December 2016, RST 3 utilized a High-purity Germanium (HPGe) detector to perform quantitative gamma spectrometry analysis of the heterogeneous samples of soil/slag/rock collected from the Site in November 2016. Subsequently, all the heterogeneous samples of soil/slag/rock were submitted to the assigned laboratory for bismuth (Bi)-212, cesium (Cs)-137, potassium (K)-40, lead (Pb)-212, protactinium (Pa)-234, Ra-226, Ra-228, Th-228, Th-230, Th-232, Th-234, thallium (Tl)-208, U-233/234, U235/236, U235, and U238, analyses. The analytical results were compared with the Site-Specific Action Levels (SSALs) established by EPA in March 2019 for the target radioisotopes. Based on analytical results, the concentrations of Pa-234M and Th-228 exceeded the respective EPA SSALs in nine samples with exceedance concentrations identified in at least one depth interval from 0 to 24 inches bgs at all four test pit locations. In addition, the concentrations of Bi-212, Pb-212, Ra-226, Ra-228, Tl-208, Th-230, Th-232, Th-234, U-233/234, and U-238, exceeded the EPA SSALs in all the samples collected from one particular test pit location. Furthermore, analytical and radiological survey results were utilized to estimate the volume of contaminated soil in the AOC. The vertical extent of the radiological contamination was estimated at 2 feet bgs based on radionuclide exceedance concentrations from analytical results, and the impacted surface area was estimated at 128.11 square meters (1,378.98 square feet) based on radiological survey results where gamma readings exceeded 3x background. Approximately 102.15 cubic yards of contaminated soil is estimated to be present at the AOC on-site.

On August 11 through 14, 2017, personnel from RST 3-procured National Radon Safety Board (NRSB)-certified Company, Accu-View Property Inspections (Accu-View), performed radon sampling in the one residence located in proximity to the AOC. A total of eight activated charcoal canisters (radon canisters), including one field duplicate (co-located canister), were deployed for radon sampling at the residence. When compared with the EPA Action Level of 4.0 pCi/L for radon, analytical results indicted radon concentrations were below the EPA Action Level.

2.0 Scope of Work

In view of a potential Removal Action at the Site, START V was tasked by EPA with providing field support for a Removal Assessment sampling event. As part of the scope of work (SOW), clean fill (2-inch crusher run) sampling was performed at an off-site fill material vendor facility to verify that the fill material at the vendor facility meets the requirement of NYSDEC Unrestricted Use Soil Cleanup Objectives (UUSCO) in accordance with New York Codes, Rules and Regulations (NYCRR) 375, for use as backfill at the Site. Disposal soil sampling was conducted on-site in order to provide analytical data which would be utilized by EPA to determine the appropriate disposal facilities certified to receive the contaminated soil from the Site. The clean fill and disposal soil samples were submitted to the assigned laboratories for analyses.

In addition to the SOW, START V was also tasked with documenting all Site activities in the Site logbook and with digital photographs, entering all sampling data into the Site-Specific Scribe database, and documenting on-site sample locations with Global Positioning System (GPS) technology.

3.0 On-Site Personnel

Name	Affiliation	Duties On-site
Eric Daly	EPA, Region II	On-Scene Coordinator
Lyndsey Nguyen	EPA/ERT	Health Physicist
Bernard Nwosu	Weston Solutions Inc., START V, Region II	Site Project Manager, Site Health and Safety, Sample Collection, QA/QC, GPS, and Sample Management

EPA: U.S. Environmental Protection Agency ERT: Environmental Response Team GPS: Global Positioning System
QA/QC: Quality Control/Quality Assurance START V: Superfund Technical Assessment and Response Team V

4.0 Site Activities and Observations

On October 22, 2019, START V visited the New Enterprise Stone & Lime Co. Inc., a fill material vendor, located at 8615 Wehrle Drive in Williamsville, New York, to sample their stockpile of 2-inch crusher run. The fill material vendor was selected by the EPA On-Scene Coordinator (OSC). A total of four grab samples, including one field duplicate, and QA/QC samples, and two composite samples, including one field duplicate, and QA/QC samples, were collected from the fill material stockpile.

Prior to mobilizing to the Site, START V contacted Dig Safely New York and requested subsurface utilities mark-out of the existing underground public utilities at the Site. On October 23, 2019, information regarding the mark-out status for most subsurface utilities around the Site had either been communicated by Dig Safely New York via email to START V or physically flagged and/or marked out except for the gas line. On the same day, National Fuel Gas Dist. Corp. (NFGDC) was on-site to locate and mark out the gas line. Following successful excavation of an area located in proximity to the AOC, NFGDC located and marked out the gas line relative to the proposed soil boring location. Subsequently, under EPA oversight and guidance from NFGDC personnel on-site, the proposed soil boring location was moved and marked out approximately 5 feet from the marked out gas line.

Utilizing dedicated stainless steel hand augers, START V advanced a boring at the selected location on-site to a depth of 24 inches bgs from which two disposal soil samples, including one field duplicate, and QA/QC samples, comprising heterogeneous mix of soil/slag/rocks, were collected at depths 0 to 12 inches bgs and one disposal soil sample also comprising heterogeneous mix of soil/slag/rocks was collected at depths 12 to 24 inches bgs. All the clean fill and disposal soil samples were shipped on October 23, 2019 to the assigned laboratories for analyses.

On October 24, 2019, START V utilized GPS technology to document the soil boring location for the sampling event at the Site and marked out the boundaries of the 738 Upper Mountain Road and TBBC properties. Utilizing a Ludlum-2241 and NaI Scintillator (EPA Tag No. S29672) setup, the EPA OSC and Health Physicist surveyed the second access road area of the TBBC property (Parcel 115.08-1-27) located between the 786 Upper Mountain Road (Parcel 115.08-1-17) and 776 Upper Mountain Road (Parcel 115.08-1-18) properties. The second access road area of the TBBC property is not part of the AOC; however, EPA surveyed this area to ensure there were no slag deposits near the roadway similar to the access road currently utilized by the 738 Upper Mountain Road property. Based on gamma readings collected with the Ludlum-2241 setup, background was

approximately 7,700 cpm and approximately 8,000 cpm near the county highway around the second access road of the TBBC property. All Site activities were noted in the Site logbook and with digital photographs.

Refer to Attachment A, Figure 2: Sample Location Map, Attachment B, Table 1: Sample Collection Summary Table, and Attachment D: Photographic Documentation log.

5.0 Sampling Methodology

All field activities were performed in accordance with the START V *Site-specific Health and Safety Plan*. All soil sampling activities were performed in compliance with EPA's Environmental Response Team (ERT)/Scientific, Engineering, Response & Analytical Services (SERAS) contractor's Standard Operating Procedure (SOP) Number (No.) 2001: *General Field Sampling Guidelines* and SOP No. 2012: *Soil Sampling*.

Clean fill sampling was performed at an off-site fill material vendor facility in accordance with NYCRR 375 and NYSDEC *Division of Environmental Remediation (DER)-10, Technical Guidance for Site Investigation and Remediation* (May 3, 2010). Samples of 2-inch crusher run were collected from three randomly selected locations on the fill material stockpile. Utilizing three 5 gram Encore™ samplers per sample, grab samples for volatile organic analysis (VOA) were collected directly from each of the three locations selected on the stockpile and, using dedicated stainless steel scoops, grab samples of the of 2-inch crusher run were collected for percent moisture analysis in a 4 ounce (oz.) glass jars from each of the three selected locations on the stockpile. In addition, composite samples of the 2-inch crusher run comprising aliquots from each of the three locations selected on the stockpile were collected using a stainless steel scoop. The aliquots were placed in aluminum pan and homogenized into one composite sample prior to being placed in recommended glass sample jars for the requested laboratory analyses.

Utilizing dedicated stainless steel hand augers, a soil boring was advanced to a depth of 24 inches bgs at a location selected on-site by the EPA OSC. At each sampling depth interval, grab disposal soil samples comprising heterogeneous mix of soil/slag/rocks were collected directly from the auger bucket using three 5 gram Encore™ samplers per sample for VOA and one 25 gram Encore™ sampler per sample for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic analysis. Subsequently, the remaining soil in the auger bucket was placed in an aluminum pan and homogenized prior to being placed in recommended glass sample jars for the requested laboratory analyses.

For QA/QC purposes, one field duplicate and additional sample volumes designated as matrix spike/matrix spike duplicate (MS/MSD) were collected for each sample matrix. Fresh nitrile gloves were donned between sampling locations and depth intervals. All sample information were entered into the Site-Specific Scribe database from which sample labels and chains of custody (COC) record were generated and printed. The sample labels were affixed to the sample jars and preserved on ice in coolers to maintain a temperature of 4 Degrees Celsius (°C).

6.0 Laboratories Receiving Samples

The following laboratories were utilized for sample analyses during the October 2019 clean fill and disposal soil sampling events.

Laboratory Name/Location	Sample Matrix	Analyses
Eurofins TestAmerica Laboratories, Inc. 13715 Rider Trail North Earth City, MO 63045 (non-CLP Laboratory)	Soil (Clean Fill/ Disposal Soil)	Gamma Spectrometry, Alpha Spectrometry; and Isotopic Uranium and Thorium (ICP-MS)
		TCLP Herbicides and RCRA Characteristics
Bonner Analytical Testing Company 2703 Oak Grove Road Hattiesburg, MS 39402 (CLP Laboratory)		TAL Metals including Mercury, and Cyanide
		TCLP Metals including Mercury
Chemtech Consulting Group 284 Sheffield Street Mountainside, NJ 07092 (CLP Laboratory)		TCL VOCs, TCL SVOCs, TCL Pesticides, and TCL PCBs
		TCLP Volatile, TCLP Semivolatile, and TCLP Pesticides

ICP-MS: Inductively Coupled Plasma Mass Spectrometry
TCLP: Toxicity Characteristic Leaching Procedure
RCRA: Resource Conservation and Recovery Act
TAL: Target Analyte List
TCL: Target Compound List
PCBs: Polychlorinated Biphenyls
CLP: Contract Laboratory Program
VOCs: Volatile Organic Compounds
SVOCs: Semivolatile Organic Compounds

7.0 Sample Dispatch

On October 23, 2019, START V shipped a total of four clean fill samples, including one field duplicate, three disposal soil samples, including one field duplicate, and one additional sample volume of each sample matrix designated as MS/MSD to Chemtech Consulting Group (Chemtech) located in Mountainside, New Jersey for TCL VOCs and percent moisture, analyses. In addition, two clean fill samples, including one field duplicate, three disposal soil samples, including one field duplicate, and one additional sample volume of each sample matrix designated as MS/MSD were shipped to Chemtech for TCL SVOCs, TCL pesticides, and TCL PCBs, analyses. Furthermore, three disposal soil samples, including one field duplicate, and one additional sample volume designated as MS/MSD were also shipped to Chemtech for TCLP VOCs, TCLP SVOCs, and TCLP pesticides, analyses. All the clean fill and disposal soil samples were shipped via FedEx Airbill No. 780470490882 under COC Record No. 2-102319-0032-0040-002 to Chemtech.

On October 23, 2019, START V shipped a total of two clean fill samples, including one field duplicate, three disposal soil samples, including one field duplicate, and one additional sample volume of each sample matrix designated as MS/MSD to Bonner Analytical Testing Company (Bonner) located in Hattiesburg, Mississippi for TAL metals including mercury, and cyanide, analyses. In addition, two disposal soil samples were also shipped to Bonner for TCLP metals including mercury, analysis. All the clean fill and disposal soil samples were shipped via FedEx Airbill No. 780470593358 under COC Record No. 2-102319-0032-0040-001 to Bonner.

On October 23, 2019, START V shipped a total of two clean fill samples, including one field duplicate, three disposal soil samples, including one field duplicate, and one additional sample volume of each sample matrix designated as MS/MSD to Eurofins TestAmerica Laboratories (TestAmerica) located in Earth City, Missouri for radiological parameters analysis, including gamma spectroscopy for Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay

chain; Ra-228 and/or actinium (Ac)-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain; other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 day ingrowth; and alpha spectroscopy for U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. In addition, the disposal soil samples were also shipped to TestAmerica for TCLP herbicides and Resource Conservation and Recovery Act (RCRA) characteristics, analyses. All the clean fill and disposal soil samples were shipped via FedEx Airbill No. 780470546960 under COC Record No. 2-102319-0032-0040-003 to TestAmerica.

Refer to Attachment B, Table 1: Soil Sample Collection Summary Table and Attachment D: Chains of Custody Record.

8.0 Analytical Results

The analytical results of the clean fill samples were compared with EPA Removal Management Levels (RMLs) for residential soil, NYSDEC UUSCOs, and SSALs established by EPA in March 2019 for the target radioisotopes. The analytical results of the disposal soil samples were compared with EPA RMLs for residential soil, EPA SSALs for the target radioisotopes (March 2019), and EPA Maximum Concentration of Contaminants (MCCs) for the toxicity characteristic as determined by TCLP.

Based on validated analytical results of the clean fill samples, TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including mercury, cyanide, and target radionuclides, were either not detected, or detected at concentrations well below their respective EPA RMLs, NYSDEC UUSCOs, and SSALs for the target radionuclides.

Based on validated analytical results of the disposal soil samples, TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including, mercury and cyanide, target radionuclides, TCLP VOCs, TCLP SVOCs, and TCLP pesticides, TCLP herbicides, and TCLP metals including mercury, were either not detected, or detected at concentrations well below their respective EPA RMLs, SSALs for the target radionuclides, and EPA MCCs. Reactive cyanide, reactive sulfide, and burn rate were not detected. The soil pH and corrosivity at depths 0 to 24 inches bgs was 8.6 J (estimated value).

Refer to Attachment A, Sample Location Map, Attachment B, Table 2 through 7: Validated Clean Fill Analytical Results Summary Tables, Tables 8 through 19: Validated Disposal Soil Analytical Results Summary Tables, and Attachment E: Data Validation Report.

9.0 Conclusion

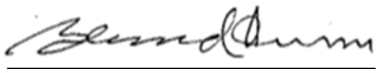
On October 22, 2019, START V visited the facility of a fill material vendor, New Enterprise Stone & Lime Co. Inc., and collected four grab clean fill samples, including one field duplicate, and two composite clean fill samples, including one field duplicate, from a fill material stockpile located on the facility. All the clean fill samples were submitted to the assigned laboratories for TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including mercury, cyanide, gamma spectrometry, alpha spectrometry, and isotopic uranium and thorium, analyses.

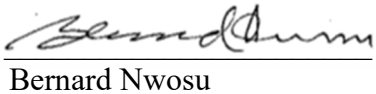
On October 23, 2019, START V utilized dedicated stainless steel hand augers to advance one soil boring at the on-site AOC to a depth of 24 inches bgs. Two disposal soil samples, including one field duplicate, were collected from the boring at depths 0 to 12 inches bgs and one disposal soil sample was collected from the boring at depths 12 to 24 inches bgs. The disposal soil samples comprised of soil/slag/rocks. All the disposal soil samples were submitted to the assigned laboratories for TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including mercury, cyanide, gamma spectrometry, alpha spectrometry, and isotopic uranium and thorium, TCLP VOCs, TCLP SVOCs, and TCLP pesticides, TCLP herbicides, and TCLP metals including mercury, analyses.

Analytical results of the clean fill samples were compared with EPA RMLs for residential soil, NYSDEC UUSCOs, and EPA SSALs for the target radioisotopes. Analytical results indicated that, TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including mercury, cyanide, and target radionuclides, were either not detected, or detected at concentrations well below their respective EPA RMLs, NYSDEC UUSCOs, and SSALs for target radionuclides.

Analytical results of the disposal soil samples were compared with EPA RMLs for residential soil, EPA SSALs for the target radioisotopes, and EPA MCCs for the toxicity characteristic as determined by TCLP. Analytical results indicated that, TCL VOCs, TCL SVOCs, TCL pesticides, and TCL PCBs, TAL metals including, mercury and cyanide, target radionuclides, TCLP VOCs, TCLP SVOCs, and TCLP pesticides, TCLP herbicides, and TCLP metals including mercury, were either not detected, or detected at concentrations well below their respective EPA RMLs, SSALs for target radionuclides, and EPA MCCs. Reactive cyanide, reactive sulfide, and burn rate were negative, and soil pH at depth 0 to 24 inches bgs was slightly basic at 8.6.

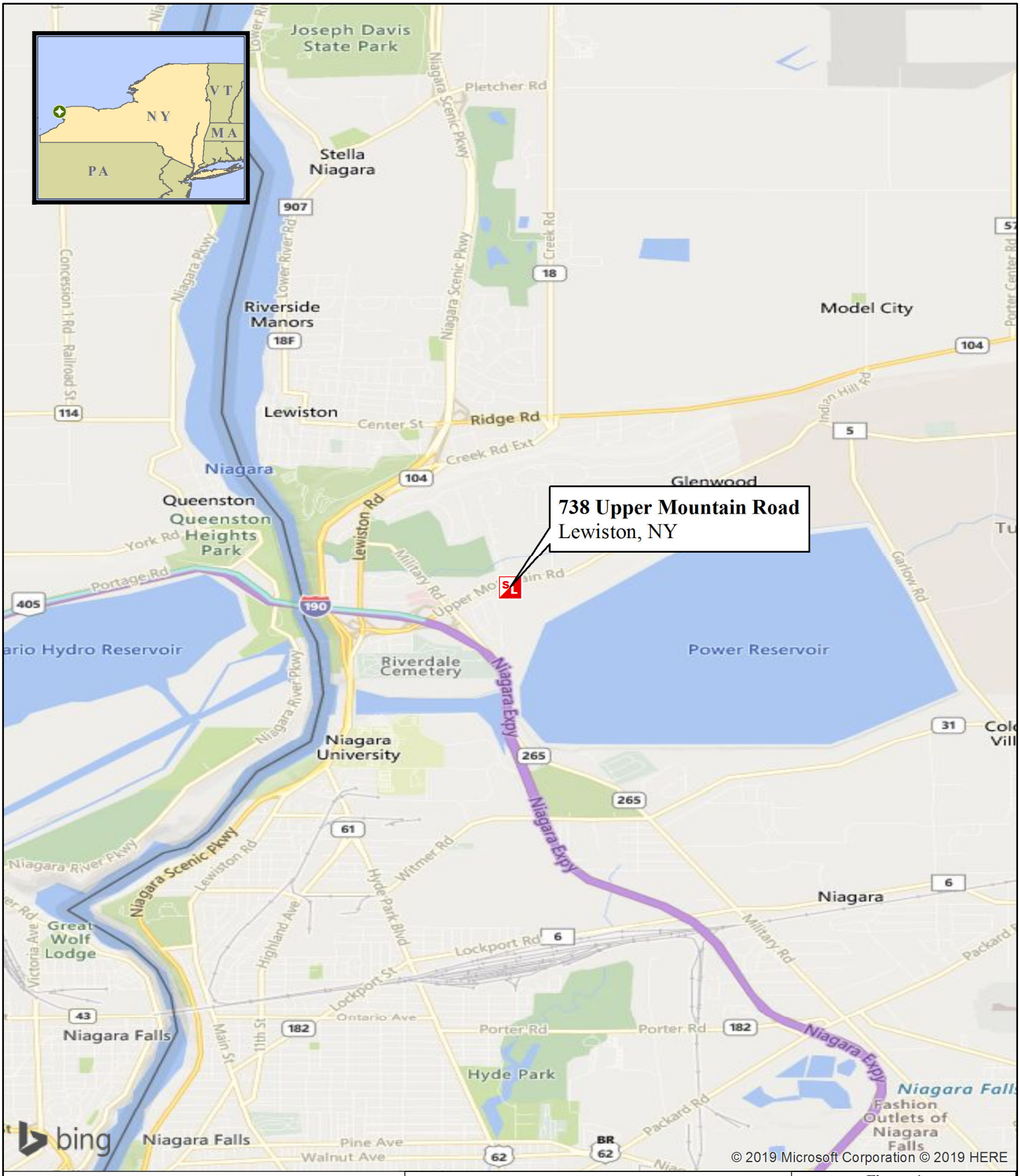
Utilizing a Ludlum-2241 and NaI Scintillator setup, EPA collected gamma readings at the second access road area of the TBBC property located between the 786 Upper Mountain Road and 776 Upper Mountain Road properties in order to verify that there were no slag deposits near the roadway similar to the access road currently utilized by the 738 Upper Mountain Road property. Gamma readings around the second access road of the TBBC property was within background levels, approximately 8,000 cpm.

Report prepared by:  06/04/2020
Bernard Nwosu — Date
START V Site Project Manager

Report reviewed by:  06/04/2020
Bernard Nwosu — Date
START V Group Leader

ATTACHMENT A

Figures



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Site Location

N

0 0.325 0.65 1.3 1.95 2.6 Miles

Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.;
On-Site Environmental, Inc.;
and Sovereign Consulting, Inc.

Figure 1:
Site Location Map

738 Upper Mountain Road Site
Lewiston, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	E. DALY
START V SPM:	B. NWOSU
CHARGE #::	40200.011.032.1040

DATE MODIFIED: 10/16/2019

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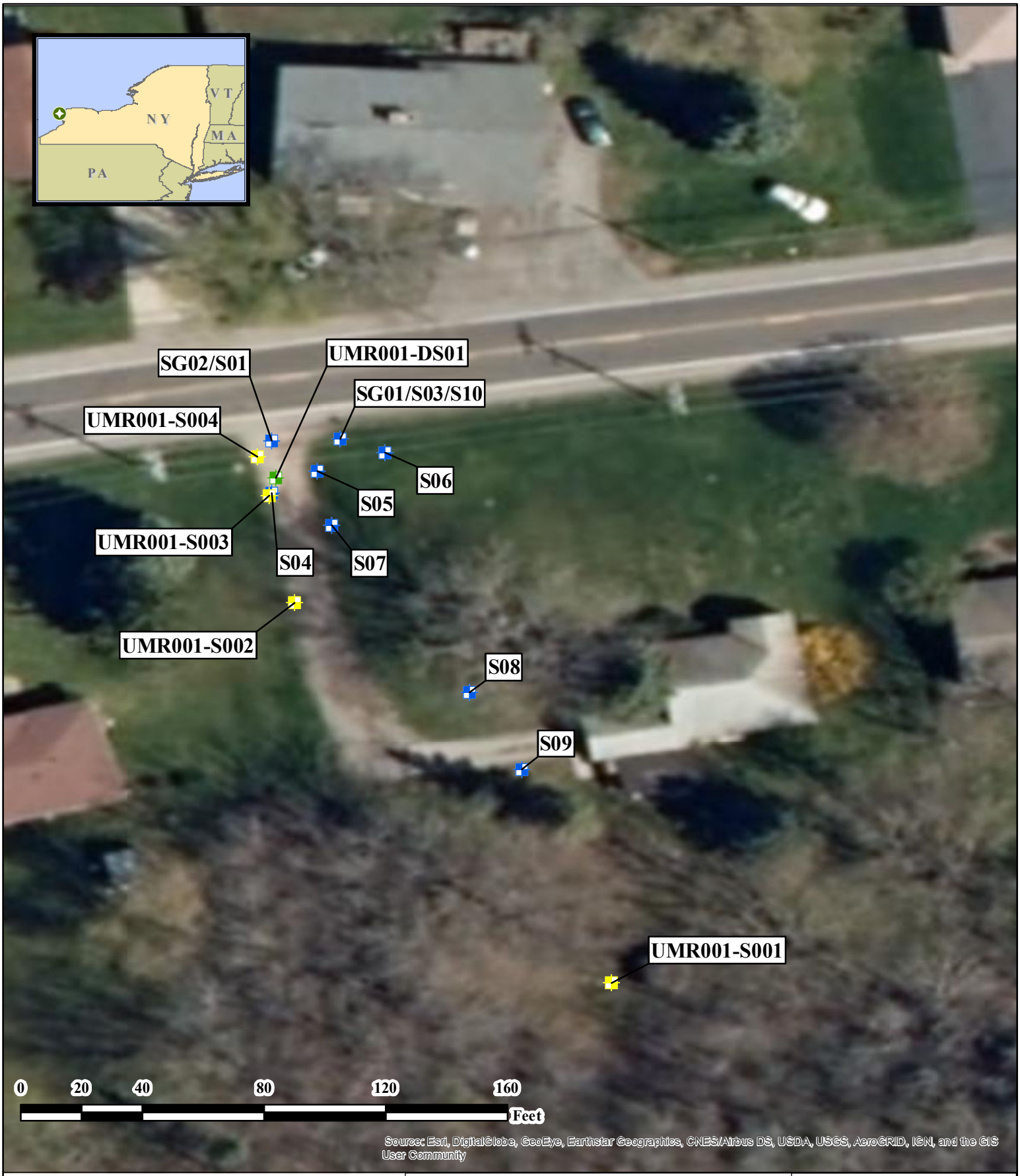

Legend

- October 2019 START V Soil Sample Location
- November 2016 RST 3 Soil Sample Location
- December 2013 SAT Soil Sample Location

N

Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.;
On-Site Environmental, Inc.;
and Sovereign Consulting, Inc.

Figure 2: Sample Location Map

738 Upper Mountain Road
Lewiston, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	E. DALY
START V SPM:	B. NWOSU
CHARGE #:	40200.011.032.1040

DATE MODIFIED: 5/29/2020

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ATTACHMENT B

Tables

Table 1: Sample Collection Summary Table
738 Upper Mountain Road
Lewiston, Niagara County, New York
October 2019

Sample Location	START V Sample No.	CLP Sample No.	Analyses	Sample Date	Sample Matrix	Collection Method	Sample Type
CF001-GRAB01	CF001-GRAB01-01	BEK27	Percent Moisture TCL Volatiles	10/22/2019	Soil	Grab	Field Sample
	CF001-GRAB01-02	BEK28	Percent Moisture TCL Volatiles	10/22/2019	Soil	Grab	Field Duplicate
CF001-GRAB02	CF001-GRAB02-01	BEK29	Percent Moisture TCL Volatiles	10/22/2019	Soil	Grab	Field Sample
CF001-GRAB03	CF001-GRAB03-01	BEK30	Percent Moisture TCL Volatiles	10/22/2019	Soil	Grab	Field Sample
CF001-COMP01	CF001-COMP01-01	BEK25	TCL Semivolatiles TCL Aroclors TCL Pesticides	10/22/2019	Soil	Composite	Field Sample
		MBEK25	TAL Metals + Mercury Cyanide				
		NA	Gamma/Alpha/ICP-MS				
	CF001-COMP01-02	BEK26	TCL Semivolatiles TCL Aroclors TCL Pesticides	10/22/2019	Soil	Composite	Field Sample
		MBEK26	TAL Metals + Mercury Cyanide				
		NA	Gamma/Alpha/ICP-MS				
UMR001-DS01	UMR001-DS01-0012-01	BEK31	TCL Volatiles Percent Moisture TCL Semivolatiles TCL Aroclors TCL Pesticides TCLP Volatiles TCLP Semivolatiles+Pest	10/23/2019	Soil	Grab	Field Sample
		MBEK31	TAL Metals + Mercury Cyanide TCLP Metals + Mercury				
		NA	TCLP Herbicides RCRA Characteristics Gamma/Alpha/ICP-MS				
	UMR001-DS01-0012-02	BEK33	TCL Volatiles Percent Moisture TCL Semivolatiles TCL Aroclors TCL Pesticides	10/23/2019	Soil	Grab	Field Duplicate
		MBEK33	TAL Metals + Mercury Cyanide				
		NA	Gamma/Alpha/ICP-MS				
	UMR001-DS01-1224-01	BEK32	TCL Volatiles Percent Moisture TCL Semivolatiles TCL Aroclors TCL Pesticides TCLP Volatiles TCLP Semivolatiles+Pest	10/23/2019	Soil	Grab	Field Sample
		MBEK32	TAL Metals + Mercury Cyanide TCLP Metals + Mercury				
		NA	TCLP Herbicides RCRA Characteristics Gamma/Alpha/ICP-MS				

Notes:
START V: Superfund Technical Assessment & Response Team V
No: Number
CLP: Contract Laboratory Program
TCL: Target Compound List
PCB: Polychlorinated Biphenyls
TAL: Target Analyte List
TCLP: Toxicity Characteristic Leaching Procedure
ICP-MS: Inductively Coupled Plasma Mass Spectrometry
RCRA: The Resource Conservation and Recovery Act

Table 2: Validated Clean Fill Analytical Results - TCL VOCs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	CF001-GRAB01-01	CF001-GRAB01-02	CF001-GRAB02-01	CF001-GRAB03-01
CLP Sample Number			MBEK27	MBEK28	MBEK29	MBEK30
Sample Date			10/22/2019	10/22/2019	10/22/2019	10/22/2019
Sample Matrix			Soil	Soil	Soil	Soil
Units			µg/kg	µg/kg	µg/kg	µg/kg
TCL VOC						
Dichlorodifluoromethane	87,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Chloromethane	110,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Vinyl chloride	5,900	20	4.1 U	4.1 U	4.4 U	4.6 U
Bromomethane	6,800	NS	4.1 U	4.1 U	4.4 U	4.6 U
Chloroethane	14,000,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Trichlorofluoromethane	23,000,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
1,1-Dichloroethene	230,000	330	4.1 U	4.1 U	4.4 U	4.6 U
1,1,2-Trichloro-1,2,2-trifluoroethane	6,700,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Acetone	61,000,000	50	**4.6 J**	8.1 U	8.9 U	**22**
Carbon disulfide	770,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Methyl Acetate	78,000,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Methylene chloride	350,000	50	4.1 U	**3.5 J**	**5.2**	**3.5 J**
trans-1,2-Dichloroethene	16,000,000	190	4.1 U	4.1 U	4.4 U	4.6 U
Methyl tert-butyl Ether	4,700,000	930	4.1 U	4.1 U	4.4 U	4.6 U
1,1-Dichloroethane	360,000	270	4.1 U	4.1 U	4.4 U	4.6 U
cis-1,2-Dichloroethene	160,000	250	4.1 U	4.1 U	4.4 U	4.6 U
2-Butanone	27,000,000	120	8.3 U	8.1 U	8.9 U	9.1 U
Bromochloromethane	150,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Chloroform	32,000	370	4.1 U	4.1 U	4.4 U	4.6 U
1,1,1-Trichloroethane	8,100,000	680	4.1 U	4.1 U	4.4 U	4.6 U
Cyclohexane	6,500,000	NS	**3.2 J+**	**3.9 J**	**2.4 J**	**4.2**
Carbon tetrachloride	65,000	760	4.1 U	4.1 U	4.4 U	4.6 U
Benzene	82,000	60	4.1 U	4.1 U	4.4 U	4.6 U
1,2-Dichloroethane	31,000	20	4.1 U	4.1 U	4.4 U	4.6 U
Trichloroethene	4,100	470	4.1 U	4.1 U	4.4 U	4.6 U
Methylcyclohexane	NS	NS	**23 J+**	**6.6**	**3.8 J**	**6.9**
1,2-Dichloropropane	16,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Bromodichloromethane	29,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
cis-1,3-Dichloropropene	72,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
4-Methyl-2-pentanone	33,000,000	NS	8.3 U	8.1 U	8.9 U	9.1 U
Toluene	4,900,000	700	4.1 U	4.1 U	4.4 U	**1.4 J**
trans-1,3-Dichloropropene	72,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
1,1,2-Trichloroethane	1,500	NS	4.1 U	4.1 U	4.4 U	4.6 U
Tetrachloroethene	81,000	1,300	4.1 U	4.1 U	4.4 U	4.6 U
2-Hexanone	200,000	NS	8.3 U	8.1 U	8.9 U	9.1 U
Dibromochloromethane	830,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
1,2-Dibromoethane	3,600	NS	4.1 U	4.1 U	4.4 U	4.6 U
Chlorobenzene	280,000	1,100	4.1 U	4.1 U	4.4 U	4.6 U
Ethylbenzene	580,000	1,000	4.1 U	4.1 U	4.4 U	4.6 U
o-xylene	650,000	*260	4.1 U	**0.78 J**	4.4 U	4.6 U
m,p-Xylene	550,000	*260	4.1 U	**1.3 J**	**1.0 J**	**1.7 J**
Styrene	6,000,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
Bromoform	1,600,000	NS	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
Isopropylbenzene	1,900,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
1,1,2,2-Tetrachloroethane	60,000	NS	4.1 U	4.1 U	4.4 U	4.6 U
1,3-Dichlorobenzene	NS	2,400	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
1,4-Dichlorobenzene	260,000	1,800	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
1,2-Dichlorobenzene	1,800,000	1,100	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
1,2-Dibromo-3-chloropropane	4,700	NS	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
1,2,4-trichlorobenzene	58,000	NS	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ
1,2,3-Trichlorobenzene	63,000	NS	4.1 U	4.1 UJ	4.4 UJ	4.6 UJ

Notes

START V: Superfund Technical Assessment & Response Team V

CLP: Contract Laboratory Program

TCL VOC: Target Compound List Volatile Organic Compound

U: Not Detected; J: Estimated Result; NS: Not Specified; J+: Estimated result, but the result may be biased high

UJ: Not detected at the estimated reporting limit; µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018

[2]New York State Department of Environmental Conservation (NYSDEC) Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006

*There is no specified NYSDEC UUSCO for m-, p-, and o- xylenes; therefore, the UUSCO for mixed xylene has been utilized

Bold results are detections

Table 3: Validated Clean Fill Analytical Results - TCL SVOCs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	CF001-COMP01-01	CF001-COMP01-02
CLP Sample Number			MBEK25	MBEK26
Sample Date			10/22/2019	10/22/2019
Sample Matrix			Soil	Soil
Units			µg/kg	µg/kg
TCL SVOC				
1,4-Dioxane	530,000	100	70 UJ	71 UJ
Benzaldehyde	7,800,000	NS	350 U	350 U
Phenol	19,000,000	330	350 U	**52 J**
Bis(2-Chloroethyl)ether	23,000	NS	350 U	350 U
2-Chlorophenol	390,000	NS	180 U	180 U
2-Methylphenol	3,200,000	330	350 U	350 U
2,2-oxybis(1-Chloropropane)	3,100,000	NS	350 U	350 U
Acetophenone	7,800,000	NS	350 U	350 U
4-Methylphenol	6,300,000	330	350 U	350 U
N-Nitroso-di-n-propylamine	7,800	NS	180 U	180 U
Hexachloroethane	45,000	NS	180 U	180 U
Nitrobenzene	130,000	NS	180 U	180 U
Isophorone	13,000,000	NS	180 U	180 U
2-Nitrophenol	NS	NS	180 U	180 U
2,4-Dimethylphenol	1,300,000	NS	180 U	180 U
Bis(2-Chloroethoxy)methane	190,000	NS	180 U	180 U
2,4-Dichlorophenol	190,000	NS	180 U	180 U
Naphthalene	130,000	12,000	180 U	180 U
4-Chloroaniline	250,000	NS	350 U	350 U
Hexachlorobutadiene	78,000	NS	180 U	180 U
Caprolactam	31,000,000	NS	350 U	350 U
4-Chloro-3-methylphenol	6,300,000	NS	180 U	180 U
2-Methylnaphthalene	240,000	NS	180 U	180 U
Hexachlorocyclopentadiene	1,800	NS	350 U	350 U
2,4,6-Trichlorophenol	63,000	NS	180 U	180 U
2,4,5-Trichlorophenol	6,300,000	NS	180 U	180 U
1,1-Biphenyl	47,000	NS	180 U	180 U
2-Chloronaphthalene	4,800,000	NS	180 U	180 U
2-Nitroaniline	630,000	NS	180 U	180 U
Dimethylphthalate	NS	NS	**200**	**210**
2,6-Dinitrotoluene	19,000	NS	180 U	180 U
Acenaphthylene	NS	100,000	180 U	180 U
3-Nitroaniline	NS	NS	350 U	350 U
Acenaphthene	3,600,000	20,000	180 U	180 U
2,4-Dinitrophenol	130,000	NS	350 U	350 U
4-Nitrophenol	NS	NS	350 U	350 U
Dibenzofuran	73,000	7,000	180 U	180 U
2,4-Dinitrotoluene	130,000	NS	180 U	180 U
Diethylphthalate	51,000,000	NS	180 U	180 U
Fluorene	2,400,000	30,000	180 U	180 U
4-Chlorophenyl-phenylether	NS	NS	180 U	180 U
4-Nitroaniline	250,000	NS	350 U	350 U
4,6-Dinitro-2-methylphenol	5,100	NS	350 U	350 U
N-Nitrosodiphenylamine	11,000,000	NS	180 U	180 U
1,2,4,5-Tetrachlorobenzene	23,000	NS	180 U	180 U
4-Bromophenyl-phenylether	NS	NS	180 U	180 U
Hexachlorobenzene	21,000	330	180 U	180 U

Notes

START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL SVOC: Target Compound List Semivolatile Organic Compound
U: Not Detected; J: Estimated Result; NS: Not Specified
UJ: Not detected at the estimated reporting limit
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
[2]New York State Department of Environmental Conservation (NYSDEC)
Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006
Bold results are detections

Table 3: Validated Clean Fill Analytical Results - TCL SVOCs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	CF001-COMP01-01	CF001-COMP01-02
CLP Sample Number			MBEK25	MBEK26
Sample Date			10/22/2019	10/22/2019
Sample Matrix			Soil	Soil
Units			µg/kg	µg/kg
TCL SVOC				
Atrazine	240,000	NS	350 U	350 U
Pentachlorophenol	100,000	800	350 U	350 U
Phenanthrene	NS	100,000	180 U	180 U
Anthracene	18,000,000	100,000	180 U	180 U
Carbazole	NS	NS	350 U	350 U
Di-n-butylphthalate	6,300,000	NS	180 U	180 U
Fluoranthene	2,400,000	100,000	350 UJ	350 UJ
Pyrene	1,800,000	100,000	180 U	180 U
Butylbenzylphthalate	13,000,000	NS	180 U	180 U
3,3-Dichlorobenzidine	120,000	NS	350 U	350 U
Benzo(a)anthracene	110,000	1,000	180 U	180 U
Chrysene	11,000,000	1,000	180 U	180 U
Bis(2-ethylhexyl)phthalate	1,300,000	NS	180 U	180 U
Di-n-octyl phthalate	630,000	NS	350 U	350 U
Benzo(b)fluoranthene	110,000	1,000	180 U	180 U
Benzo(k)fluoranthene	1,100,000	800	180 U	180 U
Benzo(a)pyrene	11,000	1,000	180 U	180 U
Indeno(1,2,3-cd)pyrene	110,000	500	180 U	180 U
Dibenzo(a,h)anthracene	11,000	330	180 U	180 U
Benzo(g,h,i)perylene	NS	100,000	180 U	180 U
2,3,4,6-Tetrachlorophenol	1,900,000	NS	180 U	180 U

Notes

START V: Superfund Technical Assessment & Response Team V

CLP: Contract Laboratory Program

TCL SVOC: Target Compound List Semivolatile Organic Compound

U: Not Detected; J: Estimated Result; NS: Not Specified

UJ: Not detected at the estimated reporting limit

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018

[2]New York State Department of Environmental Conservation (NYSDEC)
Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006

Bold results are detections

Table 4: Validated Clean Fill Analytical Results - TCL PCBs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	CF001-COMP01-01	CF001-COMP01-02
CLP Sample Number			MBEK25	MBEK26
Sample Date			10/22/2019	10/22/2019
Sample Matrix			Soil	Soil
Units			µg/kg	µg/kg
TCL PCB				
Aroclor-1016	4,100	100	35 U	35 U
Aroclor-1221	20,000	100	35 U	35 U
Aroclor-1232	17,000	100	35 U	35 U
Aroclor-1242	23,000	100	35 U	35 U
Aroclor-1248	23,000	100	35 U	35 U
Aroclor-1254	1,200	100	35 U	35 U
Aroclor-1260	24,000	100	35 U	35 U
Aroclor-1262	NS	100	35 U	35 U
Aroclor-1268	NS	100	35 U	35 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL PCB: Target Compound List Polychlorinated Biphenyl
U: Not Detected
NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
[2]New York State Department of Environmental Conservation (NYSDEC)
Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006

Table 5: Validated Clean Fill Analytical Results - TCL Pesticides Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	CF001-COMP01-01	CF001-COMP01-02
CLP Sample Number			MBEK25	MBEK26
Sample Date			10/22/2019	10/22/2019
Sample Matrix			Soil	Soil
Units			µg/kg	µg/kg
TCL Pesticide				
alpha-BHC	8,600	20	1.8 U	1.8 U
beta-BHC	30,000	36	1.8 U	1.8 U
delta-BHC	NS	40	1.8 U	1.8 U
gamma-BHC (Lindane)	21,000	100	1.8 U	1.8 U
Heptachlor	13,000	42	1.8 U	1.8 U
Aldrin	2,300	5	1.8 U	1.8 U
Heptachlor epoxide	1,000	42	1.8 U	1.8 U
Endosulfan I	470,000	2,400	1.8 U	1.8 U
Dieldrin	3,200	5	3.5 U	3.5 U
4,4-DDE	23,000	3.3	3.5 U	3.5 U
Endrin	19,000	14	3.5 U	3.5 U
Endosulfan II	NS	2,400	3.5 U	3.5 U
4,4-DDD	1,900	3	3.5 U	3.5 U
Endosulfan Sulfate	NS	2,400	3.5 U	3.5 U
4,4-DDT	37,000	3.3	3.5 U	3.5 U
Methoxychlor	320,000	NS	18 U	18 U
Endrin ketone	NS	NS	3.5 U	3.5 U
Endrin Aldehyde	NS	NS	3.5 U	3.5 U
cis-Chlordane	35,000	94	1.8 U	1.8 U
trans-Chlordane	35,000	NS	1.8 U	1.8 U
Toxaphene	5,700	NS	180 U	180 U

Notes

START V: Superfund Technical Assessment & Response Team V

CLP: Contract Laboratory Program

TCL: Target Compound List

U: Not Detected

NS: Not Specified

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018

[2]New York State Department of Environmental Conservation (NYSDEC)

Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006

Table 6: Validated Clean Fill Analytical Results - TAL Metals Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (mg/kg)	[2]NYSDEC UUSCO (mg/kg)	CF001-COMP01-01	CF001-COMP01-02
CLP Sample Number			MBEK25	MBEK26
Sample Date			10/22/2019	10/22/2019
Sample Matrix			Soil	Soil
Units			mg/kg	mg/kg
TAL Metal+Hg+CN				
Aluminum	77,000	NS	**1,560**	**1,280**
Antimony	31	NS	5.8 UJ	6.1 U
Arsenic	35	13	**2.1 J**	**1.7**
Barium	15,000	350	19.5 U	20.4 U
Beryllium	160	7.2	**0.12 J**	**0.093 J**
Cadmium	71***	2.5	**0.13 J**	**0.12 J**
Calcium	NS	NS	**220,000**	**153,000**
Chromium	NS**	NS	**6.0 J**	**5.0**
Cobalt	23	NS	**0.76 J**	**0.65 J**
Copper	3,100	50	**3.8 J**	**3.5**
Iron	55,000	NS	**2,350**	**2,200**
Lead	400	63	0.97 U	1.0 U
Magnesium	NS	NS	**3830 J**	**3550**
Manganese	1,800	1,600	**77.3**	**66.1**
Nickel	1,500*	30	**5.6**	**5.2**
Potassium	NS	NS	**539**	509 U
Selenium	390	3.9	3.4 UJ	**0.31 J**
Silver	390	2	0.97 U	1.0 U
Sodium	NS	NS	486 U	509 U
Thallium	0.78*	NS	2.4 U	2.5 U
Vanadium	390	NS	**4.8 J**	**4.0 J**
Zinc	23,000	109	**16.1 J**	**13.1**
Mercury	11	0.18	0.10 U	0.10 U
Cyanide	23	27	0.49 U	0.49 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TAL: Target Analyte List
Hg: Mercury; CN: Cyanide
U: Not Detected; J: Estimated Result
UJ: Not detected at the estimated reporting limit
NS: Not Specified
mg/kg: Milligrams per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
[2]New York State Department of Environmental Conservation (NYSDEC)
Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006
* RML is for soluble salts of specified element
** No specified EPA RML for chromium; EPA RMLs are 30 mg/kg for hexavalent chromium and 120,000 mg/kg for trivalent chromiu
*** RML is for dietary cadmium
Bold results are detections

Table 7: Validated Clean Fill Analytical Results - Radiochemistry Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

	START V Sample Number		CF001-COMP01-01			CF001-COMP01-02		
	Sample Collection		Composite			Composite		
	Sample Matrix		Soil			Soil		
	Sample Date		10/22/2019			10/22/2019		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP/MS	NS	**0.13**	**J**		0.13	R	
Uranium-233 (U-233)	ICP/MS	NS	0.0026	U		0.0027	U	
Uranium-234 (U-234)	ICP/MS	NS	0.0026	UJ		0.0027	UJ	
Uranium-235 (U-235)	ICP/MS	NS	**0.012**	**J**		**0.0091**	**J**	
Uranium-236 (U-236)	ICP/MS	NS	0.0026	U		0.0027	U	
Uranium-238 (U-238)	ICP/MS	NS	**1.4**	**J**		**1.1**	**J**	
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP/MS	NS	0.014	UJ		0.014	R	
Actinium-228 (Ac-228)	GA-01-R	5.01	**0.333**		0.174	0.198	U	0.191
Bismuth-212 (Bi-212)	GA-01-R	5.01	-0.394	U	0.821	-0.0493	U	1.34
Bismuth-214 (Bi-214)	GA-01-R	NS	**0.654**		0.170	**0.915**		0.24
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.0317	U	0.0578	-0.0346	U	0.140
Lead-212 (Pb-212)	GA-01-R	5.01	0.0531	U	0.151	0.0100	U	0.196
Lead-214 (Pb-214)	GA-01-R	NS	**0.813**		0.179	**0.830**		0.204
Potassium-40 (K-40)	GA-01-R	83.30	**2.30**		1.21	**2.02**		2.00
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.102	U	0.294	0.0772	U	0.110
Radium-224 (Ra-224)	GA-01-R	NS	0.0531	U	0.151	0.0100	U	0.196
Radium-226* (Ra-226)	GA-01-R	5.18	**0.654**		0.170	**0.915**		0.240
Radium-228 (Ra-228)	GA-01-R	5.01	**0.333**		0.174	0.198	U	0.191
Thallium-208 (Tl-208)	GA-01-R	5.01	0.0672	U	0.0765	0.0797	U	0.139
Thorium-228 (Th-228)	A-01-R	5.01	0.0929	UJ	0.0908	0.208	UJ	0.111
Thorium-230 (Th-230)	A-01-R	5.18	**0.703**		0.199	**0.740**		0.204
Thorium-232 (Th-232)	A-01-R	5.01	**0.105**		0.0718	**0.168**		0.0883
Thorium-234 (Th-234)	GA-01-R	5.18	0.237	U	0.574	-1.60	U	1.05
Uranium-233/234 (U-233/234)	A-01-R	5.18	**0.510**		0.136	**0.536**		0.141
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.0374	U	0.0403	0.0361	U	0.0420
Uranium-238 (U-238)	A-01-R	5.18	**0.475**		0.130	**0.494**		0.135

Notes:
START V: Superfund Technical Assessment & Response Team V
U: Not Detected
J: Estimated Result
NS: Not Specified
Radium-226* analyzed via 21 days ingrowth.
mg/kg: Milligrams per kilogram
pCi/g: Picocuries per gram.
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL), March 2019.
Result values in bold font are detections

Table 8: Validated Disposal Soil Analytical Results - TCL VOCs Summary Table
738 Upper Mountain Road Site
Lewisten, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK33	MBEK32
Sample Date		10/23/2019	10/23/2019	10/23/2019
Sample Matrix		Soil	Soil	Soil
Units		µg/kg	µg/kg	µg/kg
TCL VOC				
Dichlorodifluoromethane	87,000	5.2 U	4.1 U	5.2 U
Chloromethane	110,000	5.2 U	4.1 U	5.2 U
Vinyl chloride	5,900	5.2 U	4.1 U	5.2 U
Bromomethane	6,800	5.2 U	4.1 U	5.2 U
Chloroethane	14,000,000	5.2 U	4.1 U	5.2 U
Trichlorofluoromethane	23,000,000	5.2 U	4.1 U	5.2 U
1,1-Dichloroethene	230,000	5.2 U	4.1 U	5.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	6,700,000	5.2 U	4.1 U	5.2 U
Acetone	61,000,000	**47**	**18**	10 U
Carbon disulfide	770,000	5.2 U	4.1 U	5.2 U
Methyl Acetate	78,000,000	5.2 U	4.1 U	5.2 U
Methylene chloride	350,000	**4.1 J**	**2.9 J**	**3.9 J**
trans-1,2-Dichloroethene	16,000,000	5.2 U	4.1 U	5.2 U
Methyl tert-butyl Ether	4,700,000	5.2 U	4.1 U	5.2 U
1,1-Dichloroethane	360,000	5.2 U	4.1 U	5.2 U
cis-1,2-Dichloroethene	160,000	5.2 U	4.1 U	5.2 U
2-Butanone	27,000,000	10 U	8.3 U	10 U
Bromochloromethane	150,000	5.2 U	4.1 U	5.2 U
Chloroform	32,000	5.2 U	4.1 U	5.2 U
1,1,1-Trichloroethane	8,100,000	5.2 U	4.1 U	5.2 U
Cyclohexane	6,500,000	5.2 U	4.1 U	5.2 U
Carbon tetrachloride	65,000	5.2 U	4.1 U	5.2 U
Benzene	82,000	5.2 U	4.1 U	5.2 U
1,2-Dichloroethane	31,000	5.2 U	4.1 U	5.2 U
Trichloroethene	4,100	5.2 U	4.1 U	5.2 U
Methylcyclohexane	NS	5.2 U	4.1 U	5.2 U
1,2-Dichloropropane	16,000	5.2 U	4.1 U	5.2 U
Bromodichloromethane	29,000	5.2 U	4.1 U	5.2 U
cis-1,3-Dichloropropene	72,000	5.2 U	4.1 U	5.2 U
4-Methyl-2-pentanone	33,000,000	10 U	8.3 U	10 U
Toluene	4,900,000	5.2 U	**0.80 J**	5.2 U
trans-1,3-Dichloropropene	72,000	5.2 U	4.1 U	5.2 U
1,1,2-Trichloroethane	1,500	5.2 U	4.1 U	5.2 U
Tetrachloroethene	81,000	5.2 U	4.1 U	5.2 U
2-Hexanone	200,000	10 U	8.3 U	10 U
Dibromochloromethane	830,000	5.2 U	4.1 U	5.2 U
1,2-Dibromoethane	3,600	5.2 U	4.1 U	5.2 U
Chlorobenzene	280,000	5.2 U	4.1 U	5.2 U
Ethylbenzene	580,000	**3.2 J**	**3.2 J**	5.2 U
o-xylene	650,000	**6.2**	**6.1**	5.2 U
m,p-Xylene	550,000	**17**	**17**	**0.99 J**
Styrene	6,000,000	5.2 U	4.1 U	5.2 U
Bromoform	1,600,000	5.2 U	4.1 U	5.2 U
Isopropylbenzene	1,900,000	5.2 U	4.1 U	5.2 U
1,1,2,2-Tetrachloroethane	60,000	5.2 U	4.1 U	5.2 U
1,3-Dichlorobenzene	NS	5.2 U	4.1 U	5.2 U
1,4-Dichlorobenzene	260,000	5.2 U	4.1 U	5.2 U
1,2-Dichlorobenzene	1,800,000	5.2 U	4.1 U	5.2 U
1,2-Dibromo-3-chloropropane	4,700	5.2 U	4.1 U	5.2 U
1,2,4-trichlorobenzene	58,000	5.2 U	4.1 U	5.2 U
1,2,3-Trichlorobenzene	63,000	5.2 U	4.1 U	5.2 U

Notes
RST 3: Removal Support Team 3
CLP: Contract Laboratory Program
TCL VOC: Target Compound List Volatile Organic Compound
U: Not Detected; J: Estimated Result; NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
Bold results are detections

Table 9: Validated Disposal Soil Analytical Results - TCL SVOCs Summary Table
738 Upper Mountain Road Site
Lewisten, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK33	MBEK32
Sample Date		10/23/2019	10/23/2019	10/23/2019
Sample Matrix		Soil	Soil	Soil
Units		µg/kg	µg/kg	µg/kg
TCL SVOC				
1,4-Dioxane	530,000	70 UJ	70 U	70 UJ
Benzaldehyde	7,800,000	350 U	350 U	350 U
Phenol	19,000,000	**55 J**	**61 J**	**42 J**
Bis(2-Chloroethyl)ether	23,000	350 U	350 U	350 U
2-Chlorophenol	390,000	180 U	180 U	180 U
2-Methylphenol	3,200,000	350 U	350 U	350 U
2,2-oxybis(1-Chloropropane)	3,100,000	350 U	350 U	350 U
Acetophenone	7,800,000	350 U	350 U	350 U
4-Methylphenol	6,300,000	350 U	350 U	350 U
N-Nitroso-di-n-propylamine	7,800	180 U	180 U	180 U
Hexachloroethane	45,000	180 U	180 U	180 U
Nitrobenzene	130,000	180 U	180 U	180 U
Isophorone	13,000,000	180 U	180 U	180 U
2-Nitrophenol	NS	180 U	180 U	180 U
2,4-Dimethylphenol	1,300,000	180 U	180 U	180 U
Bis(2-Chloroethoxy)methane	190,000	180 U	180 U	180 U
2,4-Dichlorophenol	190,000	180 U	180 U	180 U
Naphthalene	130,000	180 U	180 U	180 U
4-Chloroaniline	250,000	350 U	350 U	350 U
Hexachlorobutadiene	78,000	180 U	180 U	180 U
Caprolactam	31,000,000	350 U	350 U	350 U
4-Chloro-3-methylphenol	6,300,000	180 U	180 U	180 U
2-Methylnaphthalene	240,000	180 U	180 U	180 U
Hexachlorocyclopentadiene	1,800	350 U	350 U	350 U
2,4,6-Trichlorophenol	63,000	180 U	180 U	180 U
2,4,5-Trichlorophenol	6,300,000	180 U	180 U	180 U
1,1-Biphenyl	47,000	180 U	180 U	180 U
2-Chloronaphthalene	4,800,000	180 U	180 U	180 U
2-Nitroaniline	630,000	180 U	180 U	180 U
Dimethylphthalate	NS	**200**	**230**	**160 J**
2,6-Dinitrotoluene	19,000	180 U	180 U	180 U
Acenaphthylene	NS	180 U	180 U	180 U
3-Nitroaniline	NS	350 U	350 U	350 U
Acenaphthene	3,600,000	180 U	180 U	180 U
2,4-Dinitrophenol	130,000	350 U	350 U	350 U
4-Nitrophenol	NS	350 U	350 U	350 U
Dibenzofuran	73,000	180 U	180 U	180 U
2,4-Dinitrotoluene	130,000	180 U	180 U	180 U
Diethylphthalate	51,000,000	180 U	180 U	180 U
Fluorene	2,400,000	180 U	180 U	180 U
4-Chlorophenyl-phenylether	NS	180 U	180 U	180 U
4-Nitroaniline	250,000	350 U	350 U	350 U
4,6-Dinitro-2-methylphenol	5,100	350 U	350 U	350 U
N-Nitrosodiphenylamine	11,000,000	180 U	180 U	180 U
1,2,4,5-Tetrachlorobenzene	23,000	180 U	180 U	180 U
4-Bromophenyl-phenylether	NS	180 U	180 U	180 U
Hexachlorobenzene	21,000	180 U	180 U	180 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL SVOC: Target Compound List Semivolatile Organic Compound
U: Not Detected; J: Estimated Result
NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
Bold results are detections

Table 9: Validated Disposal Soil Analytical Results - TCL SVOCs Summary Table
738 Upper Mountain Road Site
Lewisten, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK33	MBEK32
Sample Date		10/23/2019	10/23/2019	10/23/2019
Sample Matrix		Soil	Soil	Soil
Units		µg/kg	µg/kg	µg/kg
TCL SVOC				
Atrazine	240,000	350 U	350 U	350 U
Pentachlorophenol	100,000	350 U	350 U	350 U
Phenanthrene	NS	180 U	180 U	180 U
Anthracene	18,000,000	180 U	180 U	180 U
Carbazole	NS	350 U	350 U	350 U
Di-n-butylphthalate	6,300,000	180 U	180 U	180 U
Fluoranthene	2,400,000	350 U	350 U	350 U
Pyrene	1,800,000	180 U	180 U	180 U
Butylbenzylphthalate	13,000,000	180 U	180 U	180 U
3,3-Dichlorobenzidine	120,000	350 U	350 U	350 U
Benzo(a)anthracene	110,000	180 U	180 U	180 U
Chrysene	11,000,000	180 U	180 U	180 U
Bis(2-ethylhexyl)phthalate	1,300,000	180 U	180 U	180 U
Di-n-octyl phthalate	630,000	350 U	350 U	350 U
Benzo(b)fluoranthene	110,000	180 U	180 U	180 U
Benzo(k)fluoranthene	1,100,000	180 U	180 U	180 U
Benzo(a)pyrene	11,000	180 U	180 U	180 U
Indeno(1,2,3-cd)pyrene	110,000	180 U	180 U	180 U
Dibenzo(a,h)anthracene	11,000	180 U	180 U	180 U
Benzo(g,h,i)perylene	NS	180 U	180 U	180 U
2,3,4,6-Tetrachlorophenol	1,900,000	180 U	180 U	180 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL SVOC: Target Compound List Semivolatile Organic Compound
U: Not Detected; J: Estimated Result
NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
Bold results are detections

Table 10: Validated Disposal Soil Analytical Results - TCL PCBs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Industrial Soil (µg/kg)	[2]NYSDEC UUSCO (µg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number			MBEK31	MBEK33	MBEK32
Sample Date			10/23/2019	10/23/2019	10/23/2019
Sample Matrix			Soil	Soil	Soil
Units			µg/kg	µg/kg	µg/kg
TCL PCB					
Aroclor-1016	51,000	100	35 U	35 U	35 U
Aroclor-1221	83,000	100	35 U	35 U	35 U
Aroclor-1232	72,000	100	35 U	35 U	35 U
Aroclor-1242	95,000	100	35 U	35 U	35 U
Aroclor-1248	95,000	100	35 U	35 U	35 U
Aroclor-1254	15,000	100	35 U	35 U	35 U
Aroclor-1260	99,000	100	35 U	35 U	35 U
Aroclor-1262	NS	100	35 U	35 U	35 U
Aroclor-1268	NS	100	35 U	35 U	35 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL PCB: Target Compound List Polychlorinated Biphenyl
U: Not Detected
NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Industrial Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
[2]New York State Department of Environmental Conservation (NYSDEC)
Unrestricted Use Soil Cleanup Objectives (UUSCO), December 2006
Bold results are detections

Table 11: Validated Disposal Soil Analytical Results - TCL Pesticides Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (µg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK33	MBEK32
Sample Date		10/23/2019	10/23/2019	10/23/2019
Sample Matrix		Soil	Soil	Soil
Units		µg/kg	µg/kg	µg/kg
TCL Pesticide				
alpha-BHC	8,600	1.8 U	1.8 U	1.8 U
beta-BHC	30,000	1.8 U	1.8 U	1.8 U
delta-BHC	NS	1.8 U	1.8 U	1.8 U
gamma-BHC (Lindane)	21,000	1.8 U	1.8 U	1.8 U
Heptachlor	13,000	1.8 U	1.8 U	1.8 U
Aldrin	2,300	1.8 U	1.8 U	1.8 U
Heptachlor epoxide	1,000	1.8 U	1.8 U	1.8 U
Endosulfan I	470,000	1.8 U	1.8 U	1.8 U
Dieldrin	3,200	3.5 U	3.5 U	3.4 U
4,4-DDE	23,000	3.5 U	3.5 U	3.4 U
Endrin	19,000	3.5 U	3.5 U	3.4 U
Endosulfan II	NS	3.5 U	3.5 U	3.4 U
4,4-DDD	1,900	3.5 U	3.5 U	3.4 U
Endosulfan Sulfate	NS	3.5 U	3.5 U	3.4 U
4,4-DDT	37,000	3.5 U	3.5 U	3.4 U
Methoxychlor	320,000	18 U	18 U	18 U
Endrin ketone	NS	3.5 U	3.5 U	3.4 U
Endrin Aldehyde	NS	3.5 U	3.5 U	3.4 U
cis-Chlordane	35,000	1.8 U	1.8 U	1.8 U
trans-Chlordane	35,000	1.8 U	1.8 U	1.8 U
Toxaphene	5,700	180 U	180 U	180 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCL: Target Compound List
U: Not Detected
NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018

Table 12: Validated Disposal Soil Analytical Results - TAL Metals Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil (mg/kg)	UMR001-DS01-0012-01	UMR001-DS01-0012-02	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK33	MBEK32
Sample Date		10/23/2019	10/23/2019	10/23/2019
Sample Matrix		Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg
TAL Metal+Hg+CN				
Aluminum	77,000	**2,330**	**2,460**	**2,420**
Antimony	31	6.2 U	6.1 U	5.9 U
Arsenic	35	**2.8**	**3.4**	**2.4**
Barium	15,000	20.6 U	**23.3**	19.7 U
Beryllium	160	**0.15 J**	**0.18 J**	**0.17 J**
Cadmium	71***	**2.0**	**1.7**	**1.3**
Calcium	NS	**172,000**	**178,000**	**186,000**
Chromium	NS**	**9.9**	**9.4**	**5.9**
Cobalt	23	**1.8 J**	**1.7 J**	**1.8 J**
Copper	3,100	**5.9**	**5.9**	**5.1**
Iron	55,000	**4,810**	**5,180**	**4,570**
Lead	400	**93.9**	**73.0**	**80.8**
Magnesium	NS	**101,000**	**106,000**	**99,800**
Manganese	1,800	**481**	**468**	**443**
Nickel	1,500*	**4.5**	**4.3**	**4.4**
Potassium	NS	**989**	**1,140**	**1,200**
Selenium	390	**0.24 J**	**0.17 J**	**0.22 J**
Silver	390	**0.099 J**	**0.14 J**	**0.12 J**
Sodium	NS	515 U	505 U	492 U
Thallium	0.78*	2.6 U	2.5 U	2.5 U
Vanadium	390	**5.6**	**5.8**	**5.6**
Zinc	23,000	**550**	**444**	**323**
Mercury	11	0.099 U	0.098 U	0.10 U
Cyanide	23	0.52 U	0.50 U	0.49 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TAL: Target Analyte List
Hg: Mercury; CN: Cyanide
U: Not Detected; J: Estimated Result
NS: Not Specified
mg/kg: Milligrams per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
* RML is for soluble salts of specified element
** No specified EPA RML for chromium; EPA RMLs are 30 mg/kg for hexavalent chromium and 120,000 mg/kg for trivalent chromium
*** RML is for dietary cadmium
Bold results are detections

Table 13: Validated Disposal Soil Analytical Results - RCRA Characteristics Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA RML Residential Soil	UMR001-DS01-0012-01	UMR001-DS01-1224-01
Sample Date		10/22/2019	10/22/2019
Sample Matrix		Soil	Soil
Cyanide, Reactive (mg/kg)	NS	25.0 U	25.0 U
Sulfide, Reactive (mg/kg)	NS	20.0 U	20.0 U
Burn Rate (mm/sec)	NS	2.20 U	2.20 U
pH (su)	NS	**8.6 J**	**8.6 J**
Corrosivity (su)	NS	**8.6 J**	**8.6 J**

Notes
START V: Superfund Technical Assessment & Response Team V
RCRA: Resource Conservation and Recovery Act
mm/sec: Millimeters per second
su: Standard Units
mg/kg: Milligrams per kilograms
U: Not Detected
NS: Not Specified
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2018
Bold results are detections

Table 14: Validated Disposal Soil Analytical Results - Radiochemistry Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

	START V Sample Number		UMR001-DS01-0012-01			UMR001-DS01-0012-02			UMR001-DS01-1224-01		
	Sample Depth (inches)		0-12			0-12			12-24		
	Sample Matrix		Soil			Soil			Soil		
	Sample Date		10/23/2019			10/23/2019			10/23/2019		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP/MS	NS	0.13	U		0.13	U		0.12	U	
Uranium-233 (U-233)	ICP/MS	NS	0.0030	U		0.0028	U		0.0029	U	
Uranium-234 (U-234)	ICP/MS	NS	0.0030	U		0.0028	U		0.0029	U	
Uranium-235 (U-235)	ICP/MS	NS	**0.013**			0.0028	U		**0.0068**		
Uranium-236 (U-236)	ICP/MS	NS	0.0030	U		0.0028	U		0.0029	U	
Uranium-238 (U-238)	ICP/MS	NS	**1.7**			**0.25**			**0.83**		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP/MS	NS	0.014	U		0.015	U		0.013	U	
Actinium-228 (Ac-228)	GA-01-R	5.01	**0.846**		0.329	**0.838**		0.293	0.254	U	0.412
Bismuth-212 (Bi-212)	GA-01-R	5.01	0.769	U	1.31	**2.08**		0.815	-0.464	U	2.23
Bismuth-214 (Bi-214)	GA-01-R	NS	**0.554**		0.200	**0.604**		0.237	0.0802	U	0.128
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.108	U	0.0954	-0.0543	U	0.102	-0.0528	U	0.183
Lead-212 (Pb-212)	GA-01-R	5.01	**0.858**		0.200	**0.909**		0.202	**0.297**		0.136
Lead-214 (Pb-214)	GA-01-R	NS	**0.983**		0.231	**0.459**		0.163	**0.495**		0.180
Potassium-40 (K-40)	GA-01-R	83.30	2.33	U	2.11	**2.87**		1.13	**3.89**		1.33
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.250	U	0.191	-0.00994	U	0.023	-0.167	U	0.490
Radium-224 (Ra-224)	GA-01-R	NS	**0.858**		0.200	**0.909**		0.202	**0.297**		0.136
Radium-226* (Ra-226)	GA-01-R	5.18	**0.554**		0.200	**0.604**		0.237	0.0802	U	0.128
Radium-228 (Ra-228)	GA-01-R	5.01	**0.846**		0.329	**0.838**		0.293	0.254	U	0.412
Thallium-208 (Tl-208)	GA-01-R	5.01	**0.327**		0.125	**0.288**		0.0888	0.119	U	0.140
Thorium-228 (Th-228)	A-01-R	5.01	0.172	UJ	0.171	0.373	UJ	0.162	**0.215**	UJ	0.151
Thorium-230 (Th-230)	A-01-R	5.18	**0.352**		0.202	**0.288**		0.161	**0.447**		0.198
Thorium-232 (Th-232)	A-01-R	5.01	0.163	U	0.161	**0.261**		0.125	**0.121**		0.0912
Thorium-234 (Th-234)	GA-01-R	5.18	0.308	U	0.759	0.590	U	0.575	-1.06	U	1.78
Uranium-233/234 (U-233/234)	A-01-R	5.18	**0.311**		0.105	**0.251**		0.0928	**0.333**		0.115
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.00979	U	0.0196	0.0171	U	0.0280	0.00276	U	0.0241
Uranium-238 (U-238)	A-01-R	5.18	**0.389**		0.116	**0.350**		0.109	**0.268**		0.103

Notes:
START V: Superfund Technical Assessment & Response Team V
U: Not Detected
J: Estimated Result
NS: Not Specified
Radium-226* analyzed via 21 days ingrowth.
mg/kg: Milligrams per kilogram
pCi/g: Picocuries per gram.
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Level (SSAL), March 2019.
Result values in bold font are detections

Table 15: Validated Disposal Soil Analytical Results - TCLP VOCs Summary Table
738 Upper Mountain Road Site
Lewisten, Niagara County, New York
October 2019

START V Sample Number	[1]EPA MCC (mg/L)	UMR001-DS01-0012-01	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK32
Sample Date		10/23/2019	10/23/2019
Sample Matrix		Soil	Soil
Units		mg/L	mg/L
TCLP VOC			
Vinyl chloride	0.2	0.0050 U	0.0050 U
1,1-Dichloroethene	0.7	0.0050 U	0.0050 U
2-Butanone	200	0.010 U	0.010 U
Chloroform	6.0	0.0050 U	0.0050 U
Carbon tetrachloride	0.5	0.0050 U	0.0050 U
Benzene	0.5	0.0050 U	0.0050 U
1,2-Dichloroethane	0.5	0.0050 U	0.0050 U
Trichloroethene	0.5	0.0050 U	0.0050 U
Tetrachloroethene	0.7	0.0050 U	0.0050 U
Chlorobenzene	100	0.0050 U	0.0050 U
1,4-Dichlorobenzene	7.5	0.0050 U	0.0050 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCLP: Toxicity Characteristics Leaching Procedure
VOC: Volatile Organic Compound
U: Not Detected
mg/L: Milligrams per liter
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009

Table 16: Validated Disposal Soil Analytical Results - TCLP SVOCs Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA MCC (mg/L)	UMR001-DS01-0012-01	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK32
Sample Date		10/23/2019	10/23/2019
Sample Matrix		Soil	Soil
Units		mg/L	mg/L
TCLP SVOC			
2-Methylphenol (o-cresol)[2]	200	0.010 U	0.010 U
4-Methylphenol (p-cresol)[2]	200	0.010 U	0.010 U
Hexachloroethane	3.0	0.0050 U	0.0050 U
Nitrobenzene	2.0	0.0050 U	0.0050 U
Hexachlorobutadiene	0.5	0.0050 U	0.0050 U
2,4,6-Trichlorophenol	2.0	0.0050 U	0.0050 U
2,4,5-Trichlorophenol	400	0.0050 U	0.0050 U
2,4-Dinitrotoluene	0.13	0.0050 U	0.0050 U
Hexachlorobenzene	0.13	0.0050 U	0.0050 U
Pentachlorophenol	100	0.010 U	0.010 U
Phenanthrene	NS	0.0050 U	0.0050 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCLP: Toxicity Characteristics Leaching Procedure
SVOC: Semivolatile Organic Compound
U: Not Detected
mg/L: Milligrams per liter
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009
[2]The EPA MCC for total cresol has been utilized

Table 17: Validated Disposal Soil Analytical Results - TCLP Pesticides Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA MCC (mg/L)	UMR001-DS01-0012-01	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK32
Sample Date		10/23/2019	10/23/2019
Sample Matrix		Soil	Soil
Units		mg/L	mg/L
TCLP Pesticide			
gamma-BHC (Lindane)	0.4	0.000050 U	0.000050 U
Heptachlor	0.008	0.000050 U	0.000050 U
Heptachlor epoxide	0.008	0.000050 U	0.000050 U
Endrin	0.02	0.00010 U	0.00010 U
Methoxychlor	10	0.00050 U	0.00050 U
cis-Chlordane[2]	0.03	0.000050 U	0.000050 U
trans-Chlordane[2]	0.03	0.000050 U	0.000050 U
Toxaphene	0.5	0.0050 U	0.0050 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCLP: Toxicity Characteristics Leaching Procedure
U: Not Detected
mg/L: Milligrams per liter
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009
[2]There is no EPA MCC for cis- and trans-chlordane, the MCC for chlordane has been utilized

Table 18: Validated Disposal Soil Analytical Results - TCLP Herbicides Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA MCC (mg/L)	UMR001-DS01-0012-01	UMR001-DS01-1224-01
Sample Date		10/23/2019	10/23/2019
Matrix		Soil	Soil
Units		mg/L	mg/L
TCLP Herbicide			
2,4-D	10	0.083 UJ	0.083 UJ
Silvex (2,4,5-TP)	1.0	0.083 UJ	0.083 UJ

Notes
START V: Superfund Technical Assessment & Response Team V
TCLP: Toxicity Characteristics Leaching Procedure
U: Not Detected
NS: Not Specified
mg/L: Milligrams per liter
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009

Table 19: Validated Disposal Soil Analytical Results - TCLP Metals Summary Table
738 Upper Mountain Road Site
Lewiston, Niagara County, New York
October 2019

START V Sample Number	[1]EPA MCC (mg/L)	UMR001-DS01-0012-01	UMR001-DS01-1224-01
CLP Sample Number		MBEK31	MBEK32
Sample Date		10/23/2019	10/23/2019
Sample Matrix		Soil	Soil
Units		mg/L	mg/L
TCLP Metal			
Arsenic	5.0	50 U	50 U
Barium	100	1,000 U	1,000 U
Cadmium	1.0	10 U	10 U
Chromium	5.0	50 U	50 U
Lead	5.0	**0.23 J**	**0.11 J**
Selenium	1.0	10 U	10 U
Silver	5.0	50 U	50 U
Mercury	0.2	**0.000027 J**	0.20 U

Notes
START V: Superfund Technical Assessment & Response Team V
CLP: Contract Laboratory Program
TCLP: Toxicity Characteristic Leaching Procedure
U: Not Detected
J: Estimated Result
mg/L: Milligrams per liter
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009
Bold results are detections

ATTACHMENT C

Photographic Documentation Log

Photographic Documentation Log
738 Upper Mountain Road
Lewiston, Niagara County, New York
October 23, 2019

Photograph 1: On October 23, 2019, the U.S. Environmental Protection Agency, Region II (EPA) and Weston Solutions Inc., Superfund Technical Assessment & Response Team V (START V) performed disposal soil sampling at the 738 Upper Mountain Road Site (the Site). Prior to mobilizing to the Site, START V contacted Dig Safely New York and requested subsurface utilities mark-out of the existing underground public utilities at the Site. Above photo shows the National Fuel Gas Dist. Corp. (NFGDC) crew preparing equipment to excavate and locate a gas line suspected to be situated in proximity to the proposed soil boring location.

Photograph 2: START V marked the proposed soil boring location at the Site, but Dig Safely New York warned not to install a boring at that location until the gas line was identified.

Photograph 3: The NFGDC crew excavated a portion of the 738 Upper Mountain Road property in order to expose and locate the gas line.

Photograph 4: View of the gas line after it was located by the NFGDC crew.

Photograph 5: The NFGDC crew marked out the location of the gas line in reference to the proposed soil boring location. For safety reasons, START V moved the location of the boring to maintain at least 5 feet clearance from the gas line.

Photograph 6: Utilizing dedicated stainless steel hand augers, START V advanced a boring at the selected location to a depth of 24 inches below ground surface (bgs). Two disposal soil samples, including one field duplicate, and quality assurance/quality control samples comprising heterogeneous mix of soil/slag/rocks were collected from the boring at depths 0 to 12 inches bgs and one disposal soil sample also comprising heterogeneous mix of soil/slag/rocks was collected at depths 12 to 24 inches bgs.

ATTACHMENT D

Chains of Custody Record

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/23/2019

CarrierName: FedEx

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 48550

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-102319-0032-0040-002

Lab: Chemtech Consulting Group

Lab Contact: Mohammad Ahmed

Lab Phone: (908) 728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
CF001-COMP01-01	BEK25	Soil/ START	Composite	CLP SVOA(21)/PR, CLP PEST(21)/PR, CLP ARO(21)/PR	1002 (4 C), 1003 (4 C), 1004 (4 C) (6)	CF001-COMP01	10/22/2019 15:50	
CF001-COMP01-02	BEK26	Soil/ START	Composite	CLP SVOA(21)/PR, CLP PEST(21)/PR, CLP ARO(21)/PR	1008 (4 C), 1009 (4 C), 1010 (4 C) (3)	CF001-COMP01	10/22/2019 15:55	
CF001-GRAB01-01	BEK27	Soil/ START	Grab	CLP VOA(21)/PR, %MOIST(21)/PR	1013 (4 C), 1014 (4 C) (7)	CF001-GRAB01	10/22/2019 15:30	
CF001-GRAB01-02	BEK28	Soil/ START	Grab	CLP VOA(21)/PR, %MOIST(21)/PR	1015 (4 C), 1016 (4 C) (4)	CF001-GRAB01	10/22/2019 15:32	
CF001-GRAB02-01	BEK29	Soil/ START	Grab	CLP VOA(21)/PR, %MOIST(21)/PR	1017 (4 C), 1018 (4 C) (4)	CF001-GRAB02	10/22/2019 15:35	
CF001-GRAB03-01	BEK30	Soil/ START	Grab	CLP VOA(21)/PR, %MOIST(21)/PR	1019 (4 C), 1020 (4 C) (4)	CF001-GRAB03	10/22/2019 15:40	
UMR001-DS01-0012-01	BEK31	Soil/ START	Grab	CLP SVOA(21)/PR, CLP PEST(21)/PR, CLP ARO(21)/PR, CLP VOA(21)/PR, %MOIST(21)/PR, T_SEMI+PEST(21)/PR, T_VOAS(21)/PR	1021 (4 C), 1022 (4 C), 1023 (4 C), 1026 (4 C), 1027 (4 C), 1029 (4 C), 1030 (4 C) (11)	UMR001-DS01	10/23/2019 12:20	

Sample(s) to be used for Lab QC: CF001-COMP01-01 Tag 1002, CF001-COMP01-01 Tag 1003, CF001-COMP01-01 Tag 1004, CF001-GRAB01-01 Tag 1013, UMR001-DS01-0012-01 Tag 1021, UMR001-DS01-0012-01 Tag 1022, UMR001-DS01-0012-01 Tag 1023, UMR001-DS01-0012-01 Tag 1026 - Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and Daly.Eric@epa.gov

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: CLP SVOA=CLP TCL Semivolatiles, CLP PEST=CLP TCL Pesticides, CLP ARO=CLP TCL Aroclors, CLP VOA=CLP TCL Volatiles, %MOIST=CLP Percent Moisture, T_SEMI+PEST=TCLP Semivolatiles+Pest, T_VOAS=TCLP Volatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples	Weston START V	10/23/19 18:00			

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/23/2019

CarrierName: FedEx

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 48550

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-102319-0032-0040-002

Lab: Chemtech Consulting Group

Lab Contact: Mohammad Ahmed

Lab Phone: (908) 728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
UMR001-DS01-1224-01	BEK32	Soil/ START	Grab	CLP SVOA(21)/PR, CLP PEST(21)/PR, CLP ARO(21)/PR, CLP VOA(21)/PR, %MOIST(21)/PR, T_SEMI+PEST(21)/PR, T_VOAS(21)/PR	1031 (4 C), 1032 (4 C), 1033 (4 C), 1036 (4 C), 1037 (4 C), 1039 (4 C), 1040 (4 C) (7)	UMR001-DS01	10/23/2019 13:00	
UMR001-DS01-0012-02	BEK33	Soil/ START	Grab	CLP SVOA(21)/PR, CLP PEST(21)/PR, CLP ARO(21)/PR, CLP VOA(21)/PR, %MOIST(21)/PR	1041 (4 C), 1042 (4 C), 1043 (4 C), 1046 (4 C), 1047 (4 C) (7)	UMR001-DS01	10/23/2019 12:25	

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and Daly.Eric@epa.gov

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: CLP SVOA=CLP TCL Semivolatiles, CLP PEST=CLP TCL Pesticides, CLP ARO=CLP TCL Aroclors, CLP VOA=CLP TCL Volatiles, %MOIST=CLP Percent Moisture, T_SEMI+PEST=TCLP Semivolatiles+Pest, T_VOAS=TCLP Volatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples	Weston START V	10/23/19 18:00			

USEPA CLP Inorganics COC (LAB COPY)

DateShipped: 10/23/2019

CarrierName: FedEx

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 48550

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-102319-0032-0040-001

Lab: Bonner Analytical Testing Company

Lab Contact: Max Bonner

Lab Phone: (601) 264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
CF001-COMP01-01	MBEK25	Soil/ START	Composite	CLP MET+Hg(21)/PR, CN(21)/PR	1006 (4 C), 1007 (4 C) (4)	CF001-COMP01	10/22/2019 15:50	
CF001-COMP01-02	MBEK26	Soil/ START	Composite	CLP MET+Hg(21)/PR, CN(21)/PR	1011 (4 C), 1012 (4 C) (2)	CF001-COMP01	10/22/2019 15:55	
UMR001-DS01-0012-01	MBEK31	Soil/ START	Grab	CLP MET+Hg(21)/PR, CN(21)/PR, T_MET+Hg(21)/PR	1024 (4 C), 1025 (4 C), 1028 (4 C) (5)	UMR001-DS01	10/23/2019 12:20	
UMR001-DS01-1224-01	MBEK32	Soil/ START	Grab	CLP MET+Hg(21)/PR, CN(21)/PR, T_MET+Hg(21)/PR	1034 (4 C), 1035 (4 C), 1038 (4 C) (3)	UMR001-DS01	10/23/2019 13:00	
UMR001-DS01-0012-02	MBEK33	Soil/ START	Grab	CLP MET+Hg(21)/PR, CN(21)/PR	1044 (4 C), 1045 (4 C) (2)	UMR001-DS01	10/23/2019 12:25	

Sample(s) to be used for Lab QC: CF001-COMP01-01 Tag 1006, CF001-COMP01-01 Tag 1007, UMR001-DS01-0012-01 Tag 1024, UMR001-DS01-0012-01 Tag 1025 - Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and Daly.Eric@epa.gov

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: CLP MET+Hg=CLP TAL Metals + Hg, CN=CLP Cyanide, T_MET+Hg=TCLP Metals + Hg

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples	Weston START V	10/23/19 18:00			

Weston Solutions, Inc.
DateShipped: 10/23/2019
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 612
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-102319-0032-0040-003
Lab: Eurofins TestAmerica Laboratories
Lab Contact: Mike Franks
Lab Phone: (314) 787-8201

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
	CF001-COMP01-01	CF001-COMP01		A	Gamma/Alpha/ICPMS	Soil	10/22/2019	15:50	2	16 oz	4 C	Y
	CF001-COMP01-02	CF001-COMP01		A	Gamma/Alpha/ICPMS	Soil	10/22/2019	15:55	1	16 oz	4 C	N
	UMR001-DS01-0012-01	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	12:20	2	16 oz	4 C	Y
	UMR001-DS01-0012-01	UMR001-DS01		B	RCRA Characteristics	Soil	10/23/2019	12:20	1	8 oz	4 C	N
	UMR001-DS01-0012-01	UMR001-DS01		C	TCLP Herbicides	Soil	10/23/2019	12:20	1	8 oz	4 C	N
	UMR001-DS01-0012-02	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	12:25	1	16 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	13:00	1	16 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		B	RCRA Characteristics	Soil	10/23/2019	13:00	1	8 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		C	TCLP Herbicides	Soil	10/23/2019	13:00	1	8 oz	4 C	N

Special Instructions: Analyze radiologicalsamples for gamma spectroscopy for Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain, Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain, other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 day ingrowth, and alpha spectroscopy for U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and Daly.Eric@epa.gov

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples	Weston START V	10/23/19 18:00	TASTL	10-24-19/0930	GOOD

160-36128 Chain of Custody

FedEx®

Address: 299 CAYUGA ROAD
CHEEKTOWAGA
NY 14225
Location: BUFA
Device ID: -BTC02
Transaction: 940245552964

FedEx Standard Overnight
780470490882 52.2 lbs. (S) 46.08
Declared Value 0
Recipient Address:
MOHAMMED AHMED
CHEMTECH CONSULTING GROUP
284 SHEFFIELD ST
Mountainside, NJ 07092
9087283151

Scheduled Delivery Date 10/24/2019

Pricing option:
STANDARD RATE

Package Information:
Your Packaging
24 x 13 x 13

FedEx Standard Overnight
780470546960 30.2 lbs. (S) 33.74
Declared Value 0
Recipient Address:
MIKE FRANKS
EUROFINS TEST AMERICA LAB INC
13715 RIDER TRAIL NORTH
Earth City, MO 63045
3147878201

Scheduled Delivery Date 10/24/2019

Pricing option:
STANDARD RATE

Package Information:
Your Packaging
16 x 15 x 11

FedEx Standard Overnight
780470593358 24.0 lbs. (S) 27.76
Declared Value 0
Recipient Address:
MAX BONNER
BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE RD
Hattiesburg, MS 39402
6012642854

Scheduled Delivery Date 10/24/2019

Pricing option:
STANDARD RATE

Package Information:
Your Packaging
16 x 15 x 10

Shipment subtotal: $107.58

Total Due: $107.58

FedEx SENDER Account
*****6103

M = Weight entered manually
S = Weight read from scale
T = Taxable item

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Oct 23, 2019 7:17:01 PM

ATTACHMENT E

Data Validation Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 48550
Site: 738 Upper Mountain Road Site
Number of Samples: 5 (Soil)
Analysis: VOA, SVOA, PEST, ARO

SDG No.: BEK25
Laboratory: Chemtech Consulting Group
Sampling dates: 10/22/2019-10/23/2019
Validation SOP: HW-33A Rev 1), HW 35A (Rev 1), HW-36A (Rev 1), HW-37A (Rev 0)

QAPP:
Contractor: Weston Solutions
Reference: DCN: STARV-01-D-0084, October 2019

SUMMARY OF DEFINITIONS:
Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None.

Major Findings:
The following samples have analytes that have been qualified "J", "J+" or "J-".
VOA: BEK27, BEK28, BEK29 and BEK30
SVOA: BEK25, BEK26, BEK31 and BEK32

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENTS:	The site-specific QAPP did not provide the project action levels for field samples.

Reviewer Name(s): Dorina Christina Alliu

Approver's Signature:

Date: 12/03/2019

Name: Russell Arnone

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: VOA

The current SOP HW-33A (Revision 1) September 2016, USEPA Region II for the evaluation of Volatile organic data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for VOA organic fraction is not validated.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. DEUTERATED MONITORING COMPOUNDS (DMC's):

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of the SOP HW-33A (Revision 1) qualifications were applied as per Table 7 SOP HW-33A (Revision 1) to all the samples and analytes as shown below.

The following samples have DMC/surrogate recoveries above the upper limit of the criteria window. Detected compounds are qualified J+. Non-detected compounds are not qualified.

Benzene-d6 BEK28
Benzene

1,2-Dichloropropane-d6 BEK27, BEK28, BEK29, BEK30RE
Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-33A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

C) Trip blank contamination for VOA aqueous samples:

Not applicable.

D) Storage Blank associated with VOA samples only:

No problems were found for this criterion.

E) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for VOA organic fractions are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene. If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 34A (Rev 1). If RRF is less than minimum RRF

specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 34A (Rev 1) for all target analytes. For the Initial Calibration Verification ICV/opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 34A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 9 of SOP HW 33A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 9 of SOP HW 33A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 9 of SOP HW 33A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below.

The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Non-detects are qualified as estimated UJ.

1,4-Dichlorobenzene-d4 BEK28, BEK28RE, BEK29, BEK29RE, BEK30, BEK30RE
1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Bromoform

8. FIELD DUPLICATES: BEK31/BEK33

One or more compounds results do not match for the field duplicate samples.

RPD is greater than 50% for Acetone.

9. COMPOUND IDENTIFICATION:

Target compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

None.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

The following samples were not used for one or more analytes.
BEK28, BEK29

The following sample was only used for one or more analytes.
BEK30

ANALYSIS: SVOA

The current SOP HW-35A (Revision 1) September 2016, USEPA Region II for the evaluation of Semi-Volatile organic data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2 has been applied. Data has been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for BNA organic fraction is not validated.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded, qualifications will be applied as per SOP HW-35A (Rev 1).

No problems were found for this criterion.

2. DEUTERATED MONITORING COMPOUNDS (DMCs):

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of SOP HW-35A (Revision 1), qualifications were applied as per Table 7 of SOP HW-35A (Revision 1) to all the samples and analytes as shown below.

The following samples have one or more DMC/surrogate recovery values less than the primary lower limit but greater than or equal to the expanded lower limit of the criteria window. Detected compounds are qualified J-. Non-detected compounds are qualified UJ.

1,4-Dioxane-d8 BEK25, BEK26, BEK31, BEK32
1,4-Dioxane

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-35A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

C) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for BNA organic fraction are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for Semi-volatiles is Decafluorotriphenyl-phosphine (DFTPP). If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems were found for this criterion.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 35A (Rev 1). If RRF is less than minimum RRF as specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 35A (Rev 1) for all target analytes. For the ICV/opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 35A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

The following analytes in the sample shown were qualified for %RSD and %D:

The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detected compounds are qualified J. Non-detected compounds are not qualified.

Fluoranthene BEK25, BEK26

Butylbenzylphthalate BEK25, BEK26

The following samples are associated with an ICV percent difference (%D) outside criteria. Detected compounds are qualified J. Non-detected compounds are qualified UJ.

Fluoranthene BEK25, BEK26

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 10 of SOP HW 35A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 10 of SOP HW 35A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 10 of SOP HW 35A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

8. FIELD DUPLICATES: BEK25/BEK26 & BEK31/BEK33

No problems were found for this criterion.

9. COMPOUND IDENTIFICATION:

Semi-Volatile Fractions:
TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within 0.06 RRT units of the standard compound and have ion spectra which have a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

Initial calibration percent relative standard deviation (%RSD) is outside criteria for the following analytes.
Fluoranthene & **Butylbenzylphthalate**

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

None.

13. DILUTIONS, RE-EXTRACTIONS and REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

ANALYSIS: PEST

The current SOP HW-36A (Revision 1) October 2016, USEPA Region II for the evaluation of Pesticides data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. If the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside Table 7 of the SOP HW-36A (Revision 1), qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

4. LABORATORY CONTROL RECOVERY (LCS):

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PESTICIDE fraction, if %RSD exceeds 20% for all analytes except alpha-BHC and delta-BHC 25%, for the two surrogates and Toxaphene 30%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) The Percent Difference (%D) for each of the SCP and surrogate in the PEM used for CCV must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference (%D) between the calibration Factor (CF) for each of the SCP and surrogate in the Calibration Verification Standard (CS3) and the mean calibration factor from the initial calibration must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference not within limits, detected associated compounds are qualified "J" and non-detected associated

compounds are qualified "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES: BEK25/BEK26 & BEK31/BEK33

No problems were found for this criterion.

8. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	**Qualifier**
0% - 25%	No qualification
26% - 70%	J
71% - 200% (interference detected, either column)	JN
> 50% (pesticide value < CRQL, value raised to CRQL)	U
> 200%	R

The following samples were qualified for % difference on the two columns.

None.

9. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

10. FIELD DOCUMENTATION:

No problems were identified.

11. OTHER PROBLEMS:

None.

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

ANALYSIS: ARO

The current SOP HW-37A (Revision 0) June 2015, USEPA Region II for the evaluation of ARO data generated through Statement of Work SOM02.2 and any future editorial revisions of

SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside Table 5 of the SOP HW-37A (Revision 0), qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

The following Aroclor matrix/matrix spike duplicate samples have percent recoveries that are greater than the upper acceptance limit. Detected compounds are qualified J. Non-detected compounds are not qualified.

Aroclor-1016
BEK25, BEK25MS, BEK25MSD

4. Laboratory Control Samples (LCS):

LCS data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the

concentration of the analyte in the blank, the analytes are qualified as non-detects U. Qualifications were applied to the samples and analytes as shown below.

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):

For the ARO fraction, if %RSD exceeds 20% for all analytes and the two surrogates, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Difference (%D):

For opening CCV, or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 25% for analytes and 30% for the two surrogates, qualify all associated positive results "J" and non-detects "UJ".

For closing CCV, if %D exceeds 50% for all analytes and the two surrogates, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES: BEK25/BEK26 & BEK31/BEK33

No problems were found for this criterion.

8. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	**Qualifier**
0% - 25%	No qualification
26% - 70%	J

71% - 200% (interference detected, either column)	JN
> 50% (ARO value < CRQL, value raised to CRQL)	U
> 200%	R

The following samples were qualified for % difference on the two columns.

BEK25MS, BEK25MSD

9. CONTRACT PROBLEMS NON-COMPLIANCE:

None.

10. FIELD DOCUMENTATION:

No problems were identified.

11. OTHER PROBLEMS:

None.

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: ABLK40	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1221	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1232	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1242	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1248	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1254	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1260	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1262	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1268	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: ALCS40	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Spike	32	J	ug/kg	32	J	1.0	YES	S3VEM
Aroclor-1221	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1232	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1242	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1248	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1254	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1260	Spike	26	J	ug/kg	26	J	1.0	YES	S3VEM
Aroclor-1262	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM
Aroclor-1268	Target	33	U	ug/kg	33	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Aldrin	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	70	UJ	ug/kg	70	U	1.0	YES	S3VEM
Benzaldehyde	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2-Chlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acetophenone	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachloroethane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Nitrobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Isophorone	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitrophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Naphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chloroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Caprolactam	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitroaniline	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dimethylphthalate	Target	200		ug/kg	200		1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Acenaphthylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acenaphthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Nitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Dibenzofuran	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Diethylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluorene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Atrazine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pentachlorophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenanthrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Carbazole	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluoranthene	Target	350	UJ	ug/kg	350	U	1.0	YES	S3VEM
Pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Chrysene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Total Alkanes	TIC	420	N	ug/kg	420	N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25MS	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Spike	160	J	ug/kg	160	P	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Spike	150		ug/kg	150		1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25MS	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Spike	13		ug/kg	13		1.0	YES	S3VEM
Heptachlor	Spike	13		ug/kg	13		1.0	YES	S3VEM
Aldrin	Spike	14		ug/kg	14		1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Spike	27		ug/kg	27		1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Spike	29		ug/kg	29		1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Spike	29		ug/kg	29		1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25MSD	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Spike	170	J	ug/kg	170	P	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Spike	150		ug/kg	150		1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK25MSD	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Spike	15		ug/kg	15		1.0	YES	S3VEM
Heptachlor	Spike	15		ug/kg	15		1.0	YES	S3VEM
Aldrin	Spike	16		ug/kg	16		1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Spike	31		ug/kg	31		1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Spike	34		ug/kg	34		1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Spike	33		ug/kg	33		1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK26	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK26	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Aldrin	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK26	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	71	UJ	ug/kg	71	U	1.0	YES	S3VEM
Benzaldehyde	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenol	Target	52	J	ug/kg	52	J	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2-Chlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acetophenone	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachloroethane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Nitrobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Isophorone	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitrophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Naphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chloroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Caprolactam	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitroaniline	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dimethylphthalate	Target	210		ug/kg	210		1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Acenaphthylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acenaphthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Nitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Dibenzofuran	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Diethylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluorene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Atrazine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pentachlorophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenanthrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Carbazole	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluoranthene	Target	350	UJ	ug/kg	350	U	1.0	YES	S3VEM
Pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Chrysene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Total Alkanes	TIC	740	N	ug/kg	740	N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK27	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: CF001-GRAB01	pH:	Sample Date: 10/22/2019	Sample Time: 15:30:00
% Moisture:		% Solids: 95.4	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Vinyl chloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromomethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Acetone	Target	4.6	J	ug/kg	4.6	J	1.0	YES	S3VEM
Carbon disulfide	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl Acetate	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylene chloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Butanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Bromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroform	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Cyclohexane	Target	3.2	J+	ug/kg	3.2	J	1.0	YES	S3VEM
Carbon tetrachloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Benzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylcyclohexane	Target	23	J+	ug/kg	23		1.0	YES	S3VEM
1,2-Dichloropropane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromodichloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Toluene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Tetrachloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Hexanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Dibromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Ethylbenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
o-xylene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
m,p-Xylene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Styrene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromoform	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Isopropylbenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Sulfurous acid, 2-ethylhexyl tride	TIC	28	JN	ug/kg	28	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
unknown-03	TIC	11	J	ug/kg	11	J	1.0	YES	NV
unknown-01	TIC	3.3	J	ug/kg	3.3	J	1.0	YES	NV
Total Alkanes	TIC	1000	BN	ug/kg	1000	BN	1.0	YES	NV
Oxalic acid, cyclohexylmethyl ethy	TIC	9.5	JN	ug/kg	9.5	JN	1.0	YES	NV
Sulfurous acid, cyclohexylmethyl h	TIC	5.2	JN	ug/kg	5.2	JN	1.0	YES	NV
cis-Decalin, 2-syn-methyl-	TIC	8.5	JN	ug/kg	8.5	JN	1.0	YES	NV
unknown-02	TIC	3.3	J	ug/kg	3.3	J	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK28	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: CF001-GRAB01	pH:	Sample Date: 10/22/2019	Sample Time: 15:32:00
% Moisture:		% Solids: 95.4	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Vinyl chloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromomethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Acetone	Target	8.1	U	ug/kg	8.1	U	1.0	YES	S3VEM
Carbon disulfide	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl Acetate	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylene chloride	Target	3.5	J	ug/kg	3.5	J	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Butanone	Target	8.1	U	ug/kg	8.1	U	1.0	YES	S3VEM
Bromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroform	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Cyclohexane	Target	3.9	J	ug/kg	3.9	J	1.0	YES	S3VEM
Carbon tetrachloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Benzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylcyclohexane	Target	6.6		ug/kg	6.6		1.0	YES	S3VEM
1,2-Dichloropropane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromodichloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	8.1	U	ug/kg	8.1	U	1.0	YES	S3VEM
Toluene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Tetrachloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Hexanone	Target	8.1	U	ug/kg	8.1	U	1.0	YES	S3VEM
Dibromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Ethylbenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
o-xylene	Target	0.78	J	ug/kg	0.78	J	1.0	YES	S3VEM
m,p-Xylene	Target	1.3	J	ug/kg	1.3	J	1.0	YES	S3VEM
Styrene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromoform	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
Isopropylbenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	4.1	UJ	ug/kg	4.1	U	1.0	YES	S3VEM
Total Alkanes	TIC	16	BN	ug/kg	16	BN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Benzene, 1,2,3-trimethyl-	TIC	2.9	JN	ug/kg	2.9	JN	1.0	YES	NV
Benzene, 1,2,4-trimethyl-	TIC	2.4	JN	ug/kg	2.4	JN	1.0	YES	NV
unknown-01	TIC	2.9	J	ug/kg	2.9	J	1.0	YES	NV
Limonene	TIC	2.0	JN	ug/kg	2.0	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK29	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: CF001-GRAB02	pH:	Sample Date: 10/22/2019	Sample Time: 15:35:00
% Moisture:		% Solids: 94.7	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Chloromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Vinyl chloride	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Bromomethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Chloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Acetone	Target	8.9	U	ug/kg	8.9	U	1.0	YES	S3VEM
Carbon disulfide	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Methyl Acetate	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Methylene chloride	Target	5.2		ug/kg	5.2		1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
2-Butanone	Target	8.9	U	ug/kg	8.9	U	1.0	YES	S3VEM
Bromochloromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Chloroform	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Cyclohexane	Target	2.4	J	ug/kg	2.4	J	1.0	YES	S3VEM
Carbon tetrachloride	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Benzene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Trichloroethene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Methylcyclohexane	Target	3.8	J	ug/kg	3.8	J	1.0	YES	S3VEM
1,2-Dichloropropane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Bromodichloromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	8.9	U	ug/kg	8.9	U	1.0	YES	S3VEM
Toluene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Tetrachloroethene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
2-Hexanone	Target	8.9	U	ug/kg	8.9	U	1.0	YES	S3VEM
Dibromochloromethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Chlorobenzene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Ethylbenzene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
o-xylene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
m,p-Xylene	Target	1.0	J	ug/kg	1.0	J	1.0	YES	S3VEM
Styrene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
Bromoform	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
Isopropylbenzene	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	4.4	U	ug/kg	4.4	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	4.4	UJ	ug/kg	4.4	U	1.0	YES	S3VEM
unknown-01	TIC	2.7	J	ug/kg	2.7	J	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Total Alkanes	TIC	2.4	BN	ug/kg	2.4	BN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK30	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: CF001-GRAB03	pH:	Sample Date: 10/22/2019	Sample Time: 15:40:00
% Moisture:		% Solids: 96.5	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Chloromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Vinyl chloride	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Bromomethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Chloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Acetone	Target	22		ug/kg	22		1.0	YES	S3VEM
Carbon disulfide	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Methyl Acetate	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Methylene chloride	Target	3.5	J	ug/kg	3.5	J	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
2-Butanone	Target	9.1	U	ug/kg	9.1	U	1.0	YES	S3VEM
Bromochloromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Chloroform	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Cyclohexane	Target	4.2		ug/kg	4.2		1.0	YES	S3VEM
Carbon tetrachloride	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Benzene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Trichloroethene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Methylcyclohexane	Target	6.9		ug/kg	6.9		1.0	YES	S3VEM
1,2-Dichloropropane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Bromodichloromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	9.1	U	ug/kg	9.1	U	1.0	YES	S3VEM
Toluene	Target	1.4	J	ug/kg	1.4	J	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Tetrachloroethene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
2-Hexanone	Target	9.1	U	ug/kg	9.1	U	1.0	YES	S3VEM
Dibromochloromethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Chlorobenzene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Ethylbenzene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
o-xylene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
m,p-Xylene	Target	1.7	J	ug/kg	1.7	J	1.0	YES	S3VEM
Styrene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
Bromoform	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
Isopropylbenzene	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	4.6	U	ug/kg	4.6	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	4.6	UJ	ug/kg	4.6	U	1.0	YES	S3VEM
Total Alkanes	TIC	24	BN	ug/kg	24	BN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyclohexene, 1-methyl-4-(1-methyle	TIC	2.7	JN	ug/kg	2.7	JN	1.0	YES	NV
unknown-01	TIC	3.2	J	ug/kg	3.2	J	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Aldrin	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	70	UJ	ug/kg	70	U	1.0	YES	S3VEM
Benzaldehyde	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenol	Target	55	J	ug/kg	55	J	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2-Chlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acetophenone	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachloroethane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Nitrobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Isophorone	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitrophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Naphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chloroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Caprolactam	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitroaniline	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dimethylphthalate	Target	200		ug/kg	200		1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Acenaphthylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acenaphthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Nitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Dibenzofuran	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Diethylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluorene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Atrazine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pentachlorophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenanthrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Carbazole	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Fluoranthene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Chrysene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Sulfurous acid, octadecyl 2-propyl	TIC	120	JN	ug/kg	120	JN	1.0	YES	NV
Total Alkanes	TIC	95	N	ug/kg	95	N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 94.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromomethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Acetone	Target	47		ug/kg	47		1.0	YES	S3VEM
Carbon disulfide	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methylene chloride	Target	4.1	J	ug/kg	4.1	J	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloroform	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Cyclohexane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Benzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Trichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Ethylbenzene	Target	3.2	J	ug/kg	3.2	J	1.0	YES	S3VEM
o-xylene	Target	6.2		ug/kg	6.2		1.0	YES	S3VEM
m,p-Xylene	Target	17		ug/kg	17		1.0	YES	S3VEM
Styrene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromoform	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Total Alkanes	TIC	2.8	BN	ug/kg	2.8	BN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Aldrin	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
4,4-DDE	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
Endrin	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
Endosulfan II	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
4,4-DDD	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
4,4-DDT	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.4	U	ug/kg	3.4	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	70	UJ	ug/kg	70	U	1.0	YES	S3VEM
Benzaldehyde	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenol	Target	42	J	ug/kg	42	J	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2-Chlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acetophenone	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachloroethane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Nitrobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Isophorone	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitrophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Naphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chloroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Caprolactam	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitroaniline	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dimethylphthalate	Target	160	J	ug/kg	160	J	1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Acenaphthylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acenaphthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Nitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Dibenzofuran	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Diethylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluorene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Atrazine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pentachlorophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenanthrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Carbazole	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluoranthene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Chrysene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Total Alkanes	TIC	97	N	ug/kg	97	N	1.0	YES	NV
Squalene	TIC	85	JN	ug/kg	85	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromomethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Acetone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Carbon disulfide	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methylene chloride	Target	3.9	J	ug/kg	3.9	J	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chloroform	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Cyclohexane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Benzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Trichloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Ethylbenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
o-xylene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
m,p-Xylene	Target	0.99	J	ug/kg	0.99	J	1.0	YES	S3VEM
Styrene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Bromoform	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.2	U	ug/kg	5.2	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK33	Method: Aroclors	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aroclor-1016	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1221	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1232	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1242	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1248	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1254	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1260	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1262	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM
Aroclor-1268	Target	35	U	ug/kg	35	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK33	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
beta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
delta-BHC	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Aldrin	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Endosulfan I	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Dieldrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDE	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan II	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDD	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
4,4-DDT	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Methoxychlor	Target	18	U	ug/kg	18	U	1.0	YES	S3VEM
Endrin ketone	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.5	U	ug/kg	3.5	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.8	U	ug/kg	1.8	U	1.0	YES	S3VEM
Toxaphene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK33	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	70	U	ug/kg	70	U	1.0	YES	S3VEM
Benzaldehyde	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenol	Target	61	J	ug/kg	61	J	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2-Chlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acetophenone	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachloroethane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Nitrobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Isophorone	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitrophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Naphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chloroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Caprolactam	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2-Nitroaniline	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dimethylphthalate	Target	230		ug/kg	230		1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Acenaphthylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Acenaphthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4-Nitrophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Dibenzofuran	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Diethylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluorene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Nitroaniline	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Atrazine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pentachlorophenol	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Phenanthrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Carbazole	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Fluoranthene	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Chrysene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	350	U	ug/kg	350	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	180	U	ug/kg	180	U	1.0	YES	S3VEM
Total Alkanes	TIC	240	N	ug/kg	240	N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK33	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 95.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Vinyl chloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromomethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Acetone	Target	18		ug/kg	18		1.0	YES	S3VEM
Carbon disulfide	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl Acetate	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylene chloride	Target	2.9	J	ug/kg	2.9	J	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Butanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Bromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chloroform	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Cyclohexane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Benzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Trichloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Methylcyclohexane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromodichloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Toluene	Target	0.80	J	ug/kg	0.80	J	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Tetrachloroethene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
2-Hexanone	Target	8.3	U	ug/kg	8.3	U	1.0	YES	S3VEM
Dibromochloromethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Chlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Ethylbenzene	Target	3.2	J	ug/kg	3.2	J	1.0	YES	S3VEM
o-xylene	Target	6.1		ug/kg	6.1		1.0	YES	S3VEM
m,p-Xylene	Target	17		ug/kg	17		1.0	YES	S3VEM
Styrene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Bromoform	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Isopropylbenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	4.1	U	ug/kg	4.1	U	1.0	YES	S3VEM
Total Alkanes	TIC	7.2	BN	ug/kg	7.2	BN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
unknown-01	TIC	2.2	J	ug/kg	2.2	J	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: PBLK49	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
beta-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
delta-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Heptachlor	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Aldrin	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Endosulfan I	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Dieldrin	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
4,4-DDE	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endrin	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endosulfan II	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
4,4-DDD	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endosulfan Sulfate	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
4,4-DDT	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Methoxychlor	Target	17	U	ug/kg	17	U	1.0	YES	S3VEM
Endrin ketone	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
trans-Chlordane	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Toxaphene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: PLCS49	Method: Pesticides	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
alpha-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
beta-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
delta-BHC	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
gamma-BHC (Lindane)	Spike	17		ug/kg	17		1.0	YES	S3VEM
Heptachlor	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Aldrin	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Heptachlor epoxide	Spike	17		ug/kg	17		1.0	YES	S3VEM
Endosulfan I	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
Dieldrin	Spike	33		ug/kg	33		1.0	YES	S3VEM
4,4-DDE	Spike	35		ug/kg	35		1.0	YES	S3VEM
Endrin	Spike	34		ug/kg	34		1.0	YES	S3VEM
Endosulfan II	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
4,4-DDD	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endosulfan Sulfate	Spike	32		ug/kg	32		1.0	YES	S3VEM
4,4-DDT	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Methoxychlor	Target	17	U	ug/kg	17	U	1.0	YES	S3VEM
Endrin ketone	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
Endrin Aldehyde	Target	3.3	U	ug/kg	3.3	U	1.0	YES	S3VEM
cis-Chlordane	Target	1.7	U	ug/kg	1.7	U	1.0	YES	S3VEM
trans-Chlordane	Spike	17		ug/kg	17		1.0	YES	S3VEM
Toxaphene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: SBLK41	Method: Semivolatiles	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
1,4-Dioxane	Target	67	U	ug/kg	67	U	1.0	YES	S3VEM
Benzaldehyde	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Phenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Bis(2-Chloroethyl)ether	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
2-Chlorophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2-Methylphenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
2,2-oxybis(1-Chloropropane)	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Acetophenone	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
4-Methylphenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
N-Nitroso-di-n-propylamine	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Hexachloroethane	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Nitrobenzene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Isophorone	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2-Nitrophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,4-Dimethylphenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Bis(2-Chloroethoxy)methane	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,4-Dichlorophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Naphthalene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
4-Chloroaniline	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Caprolactam	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
4-Chloro-3-methylphenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2-Methylnaphthalene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Hexachlorocyclopentadiene	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
1,1-Biphenyl	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2-Chloronaphthalene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2-Nitroaniline	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Dimethylphthalate	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,6-Dinitrotoluene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Acenaphthylene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
3-Nitroaniline	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Acenaphthene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,4-Dinitrophenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
4-Nitrophenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Dibenzofuran	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Diethylphthalate	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Fluorene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
4-Chlorophenyl-phenylether	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
4-Nitroaniline	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
4,6-Dinitro-2-methylphenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
N-Nitrosodiphenylamine	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
1,2,4,5-Tetrachlorobenzene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
4-Bromophenyl-phenylether	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Atrazine	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Pentachlorophenol	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Phenanthrene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Anthracene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Carbazole	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Di-n-butylphthalate	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Fluoranthene	Target	330	UJ	ug/kg	330	U	1.0	YES	S3VEM
Pyrene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Butylbenzylphthalate	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
3,3-Dichlorobenzidine	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Benzo(a)anthracene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Chrysene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Bis(2-ethylhexyl)phthalate	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Di-n-octyl phthalate	Target	330	U	ug/kg	330	U	1.0	YES	S3VEM
Benzo(b)fluoranthene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Benzo(k)fluoranthene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Benzo(a)pyrene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Indeno(1,2,3-cd)pyrene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Dibenzo(a,h)anthracene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Benzo(g,h,i)perylene	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
2,3,4,6-Tetrachlorophenol	Target	170	U	ug/kg	170	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: VBLK12	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromomethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Acetone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Carbon disulfide	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylene chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Cyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Benzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Ethylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
o-xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
m,p-Xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Styrene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromoform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: VBLK13	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromomethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Acetone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Carbon disulfide	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylene chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Cyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Benzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Ethylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
o-xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
m,p-Xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Styrene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromoform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: VBLK15	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromomethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Acetone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Carbon disulfide	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylene chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Cyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Benzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Ethylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
o-xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
m,p-Xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Styrene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromoform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK25** | **Lab Name: Chemtech Consulting Group**

Sample Number: VHBLK01	Method: Volatile Organics	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Dichlorodifluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Vinyl chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromomethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichlorofluoromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloro-1,2,2-trifluoroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Acetone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Carbon disulfide	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl Acetate	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylene chloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methyl tert-butyl Ether	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,2-Dichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Butanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Bromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chloroform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,1-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Cyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Benzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Trichloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Methylcyclohexane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromodichloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
cis-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
4-Methyl-2-pentanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Toluene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
trans-1,3-Dichloropropene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2-Trichloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Tetrachloroethene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
2-Hexanone	Target	10	U	ug/kg	10	U	1.0	YES	S3VEM
Dibromochloromethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromoethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Chlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Ethylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
o-xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
m,p-Xylene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Styrene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Bromoform	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Isopropylbenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,1,2,2-Tetrachloroethane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,3-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2-Dibromo-3-chloropropane	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,4-trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
1,2,3-Trichlorobenzene	Target	5.0	U	ug/kg	5.0	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	ug/kg		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project	GroupID: 48550/EPW14030/BEK25	Lab Name: Chemtech Consulting Group

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 48550
Site: 738 Upper Mountain Road Site
Number of Samples: 3 (Water)
Analysis: TCLP VOA, TCLP SVOA and TCLP PEST

SDG No.: BEK31
Laboratory: Chemtech Consulting Group
Sampling date: 10/23/19
Validation SOP: HW-33A (Rev.1), HW-35A (Rev.1), HW-36A (Rev.1)

QAPP:
Contractor: Weston Solutions
Reference: DCN: STARV-01-D-0084, October 2019

SUMMARY OF DEFINITIONS:
Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
None

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENTS:	The site specific QAPP did not provide project action levels for TCLP soil sample from this site.

Reviewer Name(s): Israel Okwuonu

Approver's Signature: **Date: 12/13/2019**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: VOA

The current SOP HW-33A (Revision 1) September 2016, USEPA Region II for the evaluation of Volatile organic data generated through Statement of Work SOM02.2 and any future editorial revisions of SOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for VOA organic fraction is not validated.

1. HOLDING TIME AND PRESERVATION:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. DEUTERATED MONITORING COMPOUNDS (DMC's):

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of the SOP HW-33A (Revision 1) qualifications were applied as per Table 7 SOP HW-33A (Revision 1) to all the samples and analytes as shown below.

2-Hexanone-d5 surrogate recoveries did not meet acceptable criteria but the associated compounds were not in the list of TCLP target analytes. Therefore, no action was taken.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse

blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-33A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

C) Trip blank contamination:

Not applicable.

D) Storage Blank associated with VOA samples only:

No problems were found for this criterion.

E) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for VOA organic fractions are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene. If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 33A (Revision 1). If RRF is less than minimum RRF specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that

compound will be rejected "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 33A (Revision 1) for all target analytes. For the Initial calibration verification ICV/opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 33A (Revision 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 9 of SOP HW 33A (Rev 1) of the associated continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 9 of SOP HW 33A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 9 of SOP HW 33A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

8. FIELD DUPLICATES:

No field duplicate sample was identified in this SDG.

9. COMPOUND IDENTIFICATION:

Target compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

None.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

ANALYSIS: SVOA

The current SOP HW-35A (Rev. 1) September 2016, USEPA Region II for the evaluation of Semi-Volatile organic data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report. Tentatively Identified Compounds (TICs) for BNA organic fraction is not validated.

1. HOLDING TIME AND PRESERVATION:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded, qualifications will be applied as per SOP HW-35A (Rev 1).

No problems were found for this criterion.

2. DEUTERATED MONITORING COMPOUNDS (DMCs):

All samples are spiked with DMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured DMC recovery limits were outside Table 6 of SOP HW-35A (Revision 1), qualifications were applied as per Table 7 of SOP HW-35A (Rev. 1) to all the samples and analytes as shown below.

1,4-Dioxane-d8, 4-Chloroaniline-d4 and 4-Nitrophenol-d4 surrogate recoveries did not meet acceptable criteria but the associated compounds were not in the list of TCLP target analytes. Therefore, no action was taken.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Not applicable.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per Table 5 of SOP HW-35A (Rev 1).

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

C) Tentatively Identified Compounds:

Tentatively Identified Compounds (TICs) for BNA organic fraction are not validated.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The

tuning standard for Semi-volatiles is Decafluorotriphenyl-phosphine (DFTPP). If the mass calibration is in error, all associated data will be classified as unusable "R".

No problems were found for this criterion.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. All analytes for initial calibration, ICV and continuing calibration should meet the minimum RRF criteria as listed in Table 2 of SOP HW 35A (Rev 1). If RRF is less than minimum RRF as specified in Table 2 for all target analytes, use professional judgment and all detects in the sample will be qualified as "J+" or "R". All non-detects for that compound will be rejected "R".

No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance.

Percent RSD must be less than maximum %RSD in Table 2 of SOP HW 35A (Rev 1) for all target analytes. For the initial calibration verification ICV/ opening or closing CCV %D must be within the inclusive opening or closing maximum %D limits as listed in Table 2 of SOP HW 35A (Rev 1) for all Target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and Non-detects are flagged "UJ" for %D values outside criteria only. If %RSD exceeds QC criteria, detects may be qualified as "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range as specified in Table 10 of SOP HW 35A (Rev 1) of the associated

continuing calibration internal standard area. The retention time of the internal standards must be within the range as specified in Table 10 of SOP HW 35A (Rev 1). If the area count is greater than, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the associated standard, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time were not met as specified in Table 10 of SOP HW 35A (Rev 1), the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction. Qualifications were applied to the samples and analytes as shown below. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

8. FIELD DUPLICATES:

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No field duplicate sample was identified in this SDG.

9. COMPOUND IDENTIFICATION:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within 0.06 RRT units of the standard compound and have ion spectra which have a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

None

11. FIELD DOCUMENTATION:

No problems were identified.

12. OTHER PROBLEMS:

None

13. DILUTIONS, RE-EXTRACTIONS and REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

ANALYSIS: PESTICIDES

The current SOP HW-36A (Rev. 1) September 2016, USEPA Region II for the evaluation of Pesticides data generated through Statement of Work SOM02.2, and any future editorial revisions of SOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi-Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. If the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside Table 7 of the SOP HW-36A (Rev. 1), qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No matrix spike/matrix spike duplicate analysis was performed for this SDG.

4. LABORATORY CONTROL RECOVERY (LCS):

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

For the PESTICIDE fraction, if %RSD exceeds 20% for all analytes except alpha-BHC and delta-BHC 25%, for the two surrogates and Toxaphene 30%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) The Percent Difference (%D) for each of the SCP and surrogate in the PEM used for CCV must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference (%D) between the calibration Factor (CF) for each of the SCP and surrogate in the Calibration Verification Standard (CS3) and the mean calibration factor from the initial calibration must be greater than or equal to -25% and less than or equal to 25.0%. The Percent Difference not within limits, detected associated compounds are qualified "J" and non-detected associated compounds are qualified "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES:

No sample duplicate was identified in this SDG.

8. COMPOUND IDENTIFICATION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

Percent Differences	**Qualifier**
0% - 25%	No qualification
26% - 200%	J
> 200% (interference detected)	JN
> 200% (interference not detected)	JN

The following samples were qualified for % difference on the two columns.

None

9. CONTRACT PROBLEMS NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

No problems were identified.

11. OTHER PROBLEMS:

None

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are used. See summary report and EDD for applicable samples and analytes.

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Pesticides	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 5.58	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
gamma-BHC (Lindane)	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Endrin	Target	0.00010	U	mg/L	0.00010	U	1.0	YES	S3VEM
Methoxychlor	Target	0.00050	U	mg/L	0.00050	U	1.0	YES	S3VEM
cis-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
trans-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Toxaphene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Semivolatiles	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 5.58	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
2-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
4-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Hexachloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Nitrobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Pentachlorophenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Phenanthrene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Butanoic acid, propyl ester	TIC	3.2	JN	mg/L	3.2	JN	1.0	YES	NV
1-Octadecanesulphonyl chloride	TIC	4.5	JN	mg/L	4.5	JN	1.0	YES	NV
Propanoic acid, 1-methylethyl este	TIC	5.3	JN	mg/L	5.3	JN	1.0	YES	NV
Propanoic acid, propyl ester	TIC	17	JN	mg/L	17	JN	1.0	YES	NV
unknown-01	TIC	2.6	J	mg/L	2.6	J	1.0	YES	NV
Dimethylphthalate	TIC	1.7	JN	mg/L	1.7	JN	1.0	YES	NV
Butanoic acid, 1-methylethyl ester	TIC	23	JN	mg/L	23	JN	1.0	YES	NV
Propanoic acid, 2-methyl-, propyl	TIC	12	JN	mg/L	12	JN	1.0	YES	NV
Total Alkanes	TIC	12	N	mg/L	12	N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK31	Method: Volatile Organics	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 7.0	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Vinyl chloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2-Butanone	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Chloroform	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Benzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Trichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Tetrachloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Chlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Propanoic acid, propyl ester	TIC	0.030	JN	mg/L	0.030	JN	1.0	YES	NV
Total Alkanes	TIC		N	mg/L		N	1.0	YES	NV
Butanoic acid, 1-methylethyl ester	TIC	0.035	JN	mg/L	0.035	JN	1.0	YES	NV
Acetic acid	TIC	0.0097	JN	mg/L	0.0097	JN	1.0	YES	NV
Butanoic acid, propyl ester	TIC	0.0040	JN	mg/L	0.0040	JN	1.0	YES	NV
Propanoic acid, 1-methylethyl este	TIC	0.0092	JN	mg/L	0.0092	JN	1.0	YES	NV
Isopropyl acetate	TIC	0.0045	JN	mg/L	0.0045	JN	1.0	YES	NV
n-Propyl acetate	TIC	0.073	JN	mg/L	0.073	JN	1.0	YES	NV
Butanoic acid, ethyl ester	TIC	0.0033	JN	mg/L	0.0033	JN	1.0	YES	NV
Propanoic acid, 2-methyl-, 1-methy	TIC	0.017	JN	mg/L	0.017	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Pesticides	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 5.60	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
gamma-BHC (Lindane)	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Endrin	Target	0.00010	U	mg/L	0.00010	U	1.0	YES	S3VEM
Methoxychlor	Target	0.00050	U	mg/L	0.00050	U	1.0	YES	S3VEM
cis-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
trans-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Toxaphene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Semivolatiles	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 5.60	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
2-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
4-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Hexachloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Nitrobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Pentachlorophenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Phenanthrene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Propanoic acid, 2-methyl-, 1-methy	TIC	12	JN	mg/L	12	JN	1.0	YES	NV
Isobutyl acetate	TIC	2.5	JN	mg/L	2.5	JN	1.0	YES	NV
Total Alkanes	TIC	11	N	mg/L	11	N	1.0	YES	NV
Butanoic acid, 1-methylethyl ester	TIC	22	JN	mg/L	22	JN	1.0	YES	NV
Propanoic acid, propyl ester	TIC	17	JN	mg/L	17	JN	1.0	YES	NV
Butanoic acid, propyl ester	TIC	3.4	JN	mg/L	3.4	JN	1.0	YES	NV
Propanoic acid, 1-methylethyl este	TIC	5.1	JN	mg/L	5.1	JN	1.0	YES	NV
Dimethylphthalate	TIC	1.9	JN	mg/L	1.9	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: BEK32	Method: Volatile Organics	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH: 7.0	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Vinyl chloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2-Butanone	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Chloroform	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Benzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Trichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Tetrachloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Chlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Butanoic acid, propyl ester	TIC	0.0042	JN	mg/L	0.0042	JN	1.0	YES	NV
n-Propyl acetate	TIC	0.083	JN	mg/L	0.083	JN	1.0	YES	NV
Propanoic acid, 2-methyl-, 1-methy	TIC	0.018	JN	mg/L	0.018	JN	1.0	YES	NV
Total Alkanes	TIC		N	mg/L		N	1.0	YES	NV
Acetic acid	TIC	0.016	JN	mg/L	0.016	JN	1.0	YES	NV
Propanoic acid, 1-methylethyl este	TIC	0.0093	JN	mg/L	0.0093	JN	1.0	YES	NV
Propanoic acid, propyl ester	TIC	0.034	JN	mg/L	0.034	JN	1.0	YES	NV
Butanoic acid, ethyl ester	TIC	0.0033	JN	mg/L	0.0033	JN	1.0	YES	NV
Butanoic acid, 1-methylethyl ester	TIC	0.037	JN	mg/L	0.037	JN	1.0	YES	NV
Isopropyl acetate	TIC	0.0046	JN	mg/L	0.0046	JN	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: PBLK24	Method: Pesticides	Matrix: Water	MA Number:
Sample Location:	pH: 6.0	Sample Date:	Sample Time:
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
gamma-BHC (Lindane)	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor epoxide	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Endrin	Target	0.00010	U	mg/L	0.00010	U	1.0	YES	S3VEM
Methoxychlor	Target	0.00050	U	mg/L	0.00050	U	1.0	YES	S3VEM
cis-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
trans-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Toxaphene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: PLCS24	Method: Pesticides	Matrix: Water	MA Number:
Sample Location:	pH: 6.0	Sample Date:	Sample Time:
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
gamma-BHC (Lindane)	Spike	0.00044		mg/L	0.00044		1.0	YES	S3VEM
Heptachlor	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
Heptachlor epoxide	Spike	0.00044		mg/L	0.00044		1.0	YES	S3VEM
Endrin	Spike	0.0010		mg/L	0.0010		1.0	YES	S3VEM
Methoxychlor	Target	0.00050	U	mg/L	0.00050	U	1.0	YES	S3VEM
cis-Chlordane	Target	0.000050	U	mg/L	0.000050	U	1.0	YES	S3VEM
trans-Chlordane	Spike	0.00045		mg/L	0.00045		1.0	YES	S3VEM
Toxaphene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: SBLK23	Method: Semivolatiles	Matrix: Water	MA Number:
Sample Location:	pH: 6.0	Sample Date:	Sample Time:
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
2-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
4-Methylphenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Hexachloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Nitrobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobutadiene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,6-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4,5-Trichlorophenol	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2,4-Dinitrotoluene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Hexachlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Pentachlorophenol	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Phenanthrene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Total Alkanes	TIC		N	mg/L		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: VBLK51	Method: Volatile Organics	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Vinyl chloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2-Butanone	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Chloroform	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Benzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Trichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Tetrachloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Chlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
unknown-01	TIC	0.018	J	mg/L	0.018	J	1.0	YES	NV
Total Alkanes	TIC		N	mg/L		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14030/BEK31** | **Lab Name: Chemtech Consulting Group**

Sample Number: VHBLK01	Method: Volatile Organics	Matrix: Water	MA Number:
Sample Location:	pH: 7.0	Sample Date:	Sample Time:
% Moisture:		% Solids: 0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Vinyl chloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,1-Dichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
2-Butanone	Target	0.010	U	mg/L	0.010	U	1.0	YES	S3VEM
Chloroform	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Carbon tetrachloride	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Benzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,2-Dichloroethane	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Trichloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Tetrachloroethene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Chlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
1,4-Dichlorobenzene	Target	0.0050	U	mg/L	0.0050	U	1.0	YES	S3VEM
Acetic acid	TIC	0.0087	JN	mg/L	0.0087	JN	1.0	YES	NV
Total Alkanes	TIC		N	mg/L		N	1.0	YES	NV

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project	GroupID: 48550/EPW14030/BEK31	Lab Name: Chemtech Consulting Group

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 48550
Site: 738 Upper Mountain Road Site
Number of Samples: 5 soil
Analysis: Metals (ICP-AES), Hg, CN

SDG No.: MBEK25
Laboratory: Bonner
Sampling dates: 10/22/2019
Validation SOP: HW-3a and -3c (Rev. 1)

QAPP:
Contractor: Weston Solutions
Reference: DCN: STARV-01-D-0084, October 2019

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
None

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	The site-specific QAPP did not specify the project action levels for samples from this site.

Reviewer Name(s): **Russell Arnone**

Approver's Signature: **Date: 12/09/2019**

Name:

Affiliation: USEPA/R2/HWSB/HWSS

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Revision 1) September 2016 USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following have analyte results less than CRQL. The associated CCB analytes results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQL.

Barium, Cadmium, Chromium
MBEK25, MBEK26, MBEK31, MBEK32

Potassium
MBEK26

Sodium
MBEK25, MBEK26, MBEK31, MBEK32, MBEK33

The following have analyte results greater than or equal MDLs and less than or equal to CRQL. The associated ICB analytes results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQL.

Antimony
MBEK33

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Sodium
MBEK25, MBEK26, MBEK31, MBEK32, MBEK33

INTERFERENCE CHECK SAMPLE

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for

analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following samples are associated with Matrix Spike sample that has spike analyte %R within 30 – 74 % and Post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.

Antimony, Selenium
MBEK25

The following samples are associated with Matrix Spike sample that has analyte %R greater than 125%, and Post-digestion spike analyte %R less than or equal to 125%. Detects are qualified as J. Nondetects are not qualified.

Arsenic
MBEK25

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (Aqueous) or 35% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% (Aqueous) and 50% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL (Aqueous) and 2x the CRQL (Soil/Sediment) shall be used if either the sample or

duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

8. LABORATORY CONTROL SAMPLE

No problems were found for this criterion.

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10% (Aqueous) or 15% (Soil/Sediment). For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following soil/sediment samples are associated with Serial Dilution (SD) sample that has analyte percent different %D greater than 15%, but less than 120%. The original sample analyte concentrations are greater than 50 X MDL. Detects are qualified as estimated J. Nondetects are not qualified.

Beryllium, Chromium, Copper
MBEK25

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample (Soil/Sediment) with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

Sediment: No problems were found for this criterion.

ANALYSIS: MERCURY

The current SOP HW-3c (Revision 1) September 2016 USEPA Region II for the evaluation of Mercury generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time, pH (aqueous samples), or cooler temperature are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (28 days) and pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects (sample quantitation limits) will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for mercury. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be employed to establish the analytical curve. At least one of the calibration standards shall be at or below the Contract Required Quantitation Limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The calibration curves for mercury shall possess a correlation coefficient of ≥ 0.995 to ensure the linearity over the calibrated range. The percent differences calculated for all of the non-zero standards must fall within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. All sample results shall be reported from an analysis within the calibrated range. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for mercury by the analysis of an ICV solution(s). The CCV standard shall be analyzed at a frequency of every hour during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 85 – 115%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure

cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

4. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

5. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (Aqueous) or 35% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.
No problems were found for this criterion.

6. FIELD DUPLICATE:

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% (Aqueous) and 50% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL (Aqueous) and 2x the CRQL (Soil/Sediment) shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

7. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample (Soil/Sediment) with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

ANALYSIS: CYANIDE

The current SOP HW-3c (Rev 1) September 2016, USEPA Region II for the evaluation of Cyanide generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time, pH (aqueous samples), or cooler temperature are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (14 days) and pH (≥12) have not been met, will be qualified as estimated, "J"; the non-detects (sample quantitation limits) will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for cyanide. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be employed to establish the analytical curve. At least one of the calibration standards shall be at or below the Contract Required Quantitation Limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The calibration curve for cyanide shall possess a correlation coefficient of ≥ 0.995 to ensure the linearity over the calibrated range. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for cyanide by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every hour during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 85 – 115%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

4. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

5. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

6. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No field duplicate sample was identified in this SDG.

7. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	40.0		mg/kg	40.0		1	YES	S3VEM
Antimony	Spike	12.4		mg/kg	12.4		1	YES	S3VEM
Arsenic	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Barium	Spike	40.5		mg/kg	40.5		1	YES	S3VEM
Beryllium	Spike	1.1		mg/kg	1.1		1	YES	S3VEM
Cadmium	Spike	1.1		mg/kg	1.1		1	YES	S3VEM
Calcium	Spike	986		mg/kg	986		1	YES	S3VEM
Chromium	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Cobalt	Spike	11.1		mg/kg	11.1		1	YES	S3VEM
Copper	Spike	5.6		mg/kg	5.6		1	YES	S3VEM
Iron	Spike	21.4		mg/kg	21.4		1	YES	S3VEM
Lead	Spike	2.2		mg/kg	2.2		1	YES	S3VEM
Magnesium	Spike	992		mg/kg	992		1	YES	S3VEM
Manganese	Spike	3.2		mg/kg	3.2		1	YES	S3VEM
Nickel	Spike	9.1		mg/kg	9.1		1	YES	S3VEM
Potassium	Spike	962		mg/kg	962		1	YES	S3VEM
Selenium	Spike	7.5		mg/kg	7.5		1	YES	S3VEM
Silver	Spike	2.0		mg/kg	2.0		1	YES	S3VEM
Sodium	Spike	930		mg/kg	930		1	YES	S3VEM
Thallium	Spike	5.1		mg/kg	5.1		1	YES	S3VEM
Vanadium	Spike	10.7		mg/kg	10.7		1	YES	S3VEM
Zinc	Spike	12.9		mg/kg	12.9		1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.49	U	mg/kg	0.49	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	1560		mg/kg	1560	*	1	YES	S3VEM
Antimony	Target	5.8	UJ	mg/kg	5.8	U*	1	YES	S3VEM
Arsenic	Target	2.1	J	mg/kg	2.1	*	1	YES	S3VEM
Barium	Target	19.5	U	mg/kg	7.0	J	1	YES	S3VEM
Beryllium	Target	0.12	J	mg/kg	0.12	J*	1	YES	S3VEM
Cadmium	Target	0.13	J	mg/kg	0.13	J	1	YES	S3VEM
Calcium	Target	220000		mg/kg	220000	D	15	YES	S3VEM
Chromium	Target	6.0	J	mg/kg	6.0	*	1	YES	S3VEM
Cobalt	Target	0.76	J	mg/kg	0.76	J	1	YES	S3VEM
Copper	Target	3.8	J	mg/kg	3.8	*	1	YES	S3VEM
Iron	Target	2350		mg/kg	2350	*	1	YES	S3VEM
Lead	Target	0.97	U	mg/kg	0.97	U*	1	YES	S3VEM
Magnesium	Target	3830	J	mg/kg	3830	*	1	YES	S3VEM
Manganese	Target	77.3		mg/kg	77.3	*	1	YES	S3VEM
Nickel	Target	5.6		mg/kg	5.6		1	YES	S3VEM
Potassium	Target	539		mg/kg	539		1	YES	S3VEM
Selenium	Target	3.4	UJ	mg/kg	3.4	U*	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.97	U	1	YES	S3VEM
Sodium	Target	486	U	mg/kg	124	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	4.8	J	mg/kg	4.8	J	1	YES	S3VEM
Zinc	Target	16.1	J	mg/kg	16.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25A	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	12.8		mg/kg	12.8		1	YES	S3VEM
Arsenic	Spike	6.8		mg/kg	6.8		1	YES	S3VEM
Lead	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Selenium	Spike	8.0		mg/kg	8.0		1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25D	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.49	U	mg/kg	0.49	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25D	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25D	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	1960		mg/kg	1960	*	1	YES	S3VEM
Antimony	Target	5.8	U	mg/kg	5.8	U	1	YES	S3VEM
Arsenic	Target	3.0		mg/kg	3.0		1	YES	S3VEM
Barium	Target	8.0	J	mg/kg	8.0	J	1	YES	S3VEM
Beryllium	Target	0.16	J	mg/kg	0.16	J	1	YES	S3VEM
Cadmium	Target	0.20	J	mg/kg	0.20	J	1	YES	S3VEM
Calcium	Target	230000		mg/kg	230000	D	15	YES	S3VEM
Chromium	Target	8.1		mg/kg	8.1	*	1	YES	S3VEM
Cobalt	Target	0.93	J	mg/kg	0.93	J	1	YES	S3VEM
Copper	Target	5.6		mg/kg	5.6		1	YES	S3VEM
Iron	Target	3190		mg/kg	3190	*	1	YES	S3VEM
Lead	Target	0.14	J	mg/kg	0.14	J	1	YES	S3VEM
Magnesium	Target	5860		mg/kg	5860	*	1	YES	S3VEM
Manganese	Target	96.1		mg/kg	96.1	*	1	YES	S3VEM
Nickel	Target	7.0		mg/kg	7.0		1	YES	S3VEM
Potassium	Target	753		mg/kg	753		1	YES	S3VEM
Selenium	Target	0.27	J	mg/kg	0.27	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.97	U	1	YES	S3VEM
Sodium	Target	155	J	mg/kg	155	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	6.7		mg/kg	6.7		1	YES	S3VEM
Zinc	Target	22.6		mg/kg	22.6	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25L	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	1540		mg/kg	1540		5	YES	S3VEM
Antimony	Target	29.2	U	mg/kg	29.2	U	5	YES	S3VEM
Arsenic	Target	2.3	J	mg/kg	2.3	J	5	YES	S3VEM
Barium	Target	6.7	J	mg/kg	6.7	J	5	YES	S3VEM
Beryllium	Target	0.091	J	mg/kg	0.091	J*	5	YES	S3VEM
Cadmium	Target	0.12	J	mg/kg	0.12	J	5	YES	S3VEM
Calcium	Target	217000		mg/kg	217000	D	75	YES	S3VEM
Chromium	Target	7.0		mg/kg	7.0	*	5	YES	S3VEM
Cobalt	Target	0.72	J	mg/kg	0.72	J	5	YES	S3VEM
Copper	Target	5.9	J	mg/kg	5.9	J*	5	YES	S3VEM
Iron	Target	2420		mg/kg	2420		5	YES	S3VEM
Lead	Target	4.9	U	mg/kg	4.9	U	5	YES	S3VEM
Magnesium	Target	3960		mg/kg	3960		5	YES	S3VEM
Manganese	Target	80.4		mg/kg	80.4		5	YES	S3VEM
Nickel	Target	5.8	J	mg/kg	5.8	J	5	YES	S3VEM
Potassium	Target	514	J	mg/kg	514	J	5	YES	S3VEM
Selenium	Target	0.98	J	mg/kg	0.98	J	5	YES	S3VEM
Silver	Target	4.9	U	mg/kg	4.9	U	5	YES	S3VEM
Sodium	Target	135	J	mg/kg	135	J	5	YES	S3VEM
Thallium	Target	12.2	U	mg/kg	12.2	U	5	YES	S3VEM
Vanadium	Target	5.0	J	mg/kg	5.0	J	5	YES	S3VEM
Zinc	Target	16.2	J	mg/kg	16.2	J	5	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25S	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Spike	0.98		mg/kg	0.98		1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25S	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Spike	0.55		mg/kg	0.55		1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK25S	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 10/22/2019	Sample Time: 15:50:00
% Moisture:		% Solids: 95.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	7.7		mg/kg	7.7	*	1	YES	S3VEM
Arsenic	Spike	13.9		mg/kg	13.9	*	1	YES	S3VEM
Barium	Spike	390		mg/kg	390		1	YES	S3VEM
Beryllium	Spike	10.7		mg/kg	10.7		1	YES	S3VEM
Cadmium	Spike	9.4		mg/kg	9.4		1	YES	S3VEM
Chromium	Spike	47.2		mg/kg	47.2		1	YES	S3VEM
Cobalt	Spike	95.8		mg/kg	95.8		1	YES	S3VEM
Copper	Spike	58.1		mg/kg	58.1		1	YES	S3VEM
Lead	Spike	7.9		mg/kg	7.9	*	1	YES	S3VEM
Manganese	Spike	197		mg/kg	197		1	YES	S3VEM
Nickel	Spike	121		mg/kg	121		1	YES	S3VEM
Selenium	Spike	10.7		mg/kg	10.7	*	1	YES	S3VEM
Silver	Spike	9.6		mg/kg	9.6		1	YES	S3VEM
Thallium	Spike	9.8		mg/kg	9.8		1	YES	S3VEM
Vanadium	Spike	107		mg/kg	107		1	YES	S3VEM
Zinc	Spike	115		mg/kg	115		1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK26	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.4	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.49	U	mg/kg	0.49	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK26	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.4	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK26	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: CF001-COMP01	pH:	Sample Date: 10/22/2019	Sample Time: 15:55:00
% Moisture:		% Solids: 95.4	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	1280		mg/kg	1280	*	1	YES	S3VEM
Antimony	Target	6.1	U	mg/kg	6.1	U*	1	YES	S3VEM
Arsenic	Target	1.7		mg/kg	1.7	*	1	YES	S3VEM
Barium	Target	20.4	U	mg/kg	5.8	J	1	YES	S3VEM
Beryllium	Target	0.093	J	mg/kg	0.093	J*	1	YES	S3VEM
Cadmium	Target	0.12	J	mg/kg	0.12	J	1	YES	S3VEM
Calcium	Target	153000		mg/kg	153000	D	10	YES	S3VEM
Chromium	Target	5.0		mg/kg	5.0	*	1	YES	S3VEM
Cobalt	Target	0.65	J	mg/kg	0.65	J	1	YES	S3VEM
Copper	Target	3.5		mg/kg	3.5	*	1	YES	S3VEM
Iron	Target	2200		mg/kg	2200	*	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U*	1	YES	S3VEM
Magnesium	Target	3550		mg/kg	3550	*	1	YES	S3VEM
Manganese	Target	66.1		mg/kg	66.1	*	1	YES	S3VEM
Nickel	Target	5.2		mg/kg	5.2		1	YES	S3VEM
Potassium	Target	509	U	mg/kg	455	J	1	YES	S3VEM
Selenium	Target	0.31	J	mg/kg	0.31	J*	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	509	U	mg/kg	116	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	4.0	J	mg/kg	4.0	J	1	YES	S3VEM
Zinc	Target	13.1		mg/kg	13.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 95.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.52	U	mg/kg	0.52	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 95.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.099	U	mg/kg	0.099	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 95.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	2330		mg/kg	2330	*	1	YES	S3VEM
Antimony	Target	6.2	U	mg/kg	6.2	U*	1	YES	S3VEM
Arsenic	Target	2.8		mg/kg	2.8	*	1	YES	S3VEM
Barium	Target	20.6	U	mg/kg	10.1	J	1	YES	S3VEM
Beryllium	Target	0.15	J	mg/kg	0.15	J*	1	YES	S3VEM
Cadmium	Target	2.0		mg/kg	2.0		1	YES	S3VEM
Calcium	Target	172000		mg/kg	172000	D	10	YES	S3VEM
Chromium	Target	9.9		mg/kg	9.9	*	1	YES	S3VEM
Cobalt	Target	1.8	J	mg/kg	1.8	J	1	YES	S3VEM
Copper	Target	5.9		mg/kg	5.9	*	1	YES	S3VEM
Iron	Target	4810		mg/kg	4810	*	1	YES	S3VEM
Lead	Target	93.9		mg/kg	93.9	*	1	YES	S3VEM
Magnesium	Target	101000		mg/kg	101000	D*	10	YES	S3VEM
Manganese	Target	481		mg/kg	481	*	1	YES	S3VEM
Nickel	Target	4.5		mg/kg	4.5		1	YES	S3VEM
Potassium	Target	989		mg/kg	989		1	YES	S3VEM
Selenium	Target	0.24	J	mg/kg	0.24	J*	1	YES	S3VEM
Silver	Target	0.099	J	mg/kg	0.099	J	1	YES	S3VEM
Sodium	Target	515	U	mg/kg	195	J	1	YES	S3VEM
Thallium	Target	2.6	U	mg/kg	2.6	U	1	YES	S3VEM
Vanadium	Target	5.6		mg/kg	5.6		1	YES	S3VEM
Zinc	Target	550		mg/kg	550	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK32	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.49	U	mg/kg	0.49	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK32	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK32	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 95.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	2420		mg/kg	2420	*	1	YES	S3VEM
Antimony	Target	5.9	U	mg/kg	5.9	U*	1	YES	S3VEM
Arsenic	Target	2.4		mg/kg	2.4	*	1	YES	S3VEM
Barium	Target	19.7	U	mg/kg	9.7	J	1	YES	S3VEM
Beryllium	Target	0.17	J	mg/kg	0.17	J*	1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3		1	YES	S3VEM
Calcium	Target	186000		mg/kg	186000	D	10	YES	S3VEM
Chromium	Target	5.9		mg/kg	5.9	*	1	YES	S3VEM
Cobalt	Target	1.8	J	mg/kg	1.8	J	1	YES	S3VEM
Copper	Target	5.1		mg/kg	5.1	*	1	YES	S3VEM
Iron	Target	4570		mg/kg	4570	*	1	YES	S3VEM
Lead	Target	80.8		mg/kg	80.8	*	1	YES	S3VEM
Magnesium	Target	99800		mg/kg	99800	D*	10	YES	S3VEM
Manganese	Target	443		mg/kg	443	*	1	YES	S3VEM
Nickel	Target	4.4		mg/kg	4.4		1	YES	S3VEM
Potassium	Target	1200		mg/kg	1200		1	YES	S3VEM
Selenium	Target	0.22	J	mg/kg	0.22	J*	1	YES	S3VEM
Silver	Target	0.12	J	mg/kg	0.12	J	1	YES	S3VEM
Sodium	Target	492	U	mg/kg	205	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	5.6		mg/kg	5.6		1	YES	S3VEM
Zinc	Target	323		mg/kg	323	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK33	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 96.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK33	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 96.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.098	U	mg/kg	0.098	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK33	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:25:00
% Moisture:		% Solids: 96.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	2460		mg/kg	2460	*	1	YES	S3VEM
Antimony	Target	6.1	U	mg/kg	0.25	J*	1	YES	S3VEM
Arsenic	Target	3.4		mg/kg	3.4	*	1	YES	S3VEM
Barium	Target	23.3		mg/kg	23.3		1	YES	S3VEM
Beryllium	Target	0.18	J	mg/kg	0.18	J*	1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	178000		mg/kg	178000	D	10	YES	S3VEM
Chromium	Target	9.4		mg/kg	9.4	*	1	YES	S3VEM
Cobalt	Target	1.7	J	mg/kg	1.7	J	1	YES	S3VEM
Copper	Target	5.9		mg/kg	5.9	*	1	YES	S3VEM
Iron	Target	5180		mg/kg	5180	*	1	YES	S3VEM
Lead	Target	73.0		mg/kg	73.0	*	1	YES	S3VEM
Magnesium	Target	106000		mg/kg	106000	D*	10	YES	S3VEM
Manganese	Target	468		mg/kg	468	*	1	YES	S3VEM
Nickel	Target	4.3		mg/kg	4.3		1	YES	S3VEM
Potassium	Target	1140		mg/kg	1140		1	YES	S3VEM
Selenium	Target	0.17	J	mg/kg	0.17	J*	1	YES	S3VEM
Silver	Target	0.14	J	mg/kg	0.14	J	1	YES	S3VEM
Sodium	Target	505	U	mg/kg	221	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	5.8		mg/kg	5.8		1	YES	S3VEM
Zinc	Target	444		mg/kg	444	*	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Cyanide	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Cyanide	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK25** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target	0.043	J	mg/kg	0.043	J	1	YES	S3VEM
Barium	Target	-0.038	J	mg/kg	-0.038	J	1	YES	S3VEM
Beryllium	Target	-0.0071	J	mg/kg	-0.0071	J	1	YES	S3VEM
Cadmium	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM
Calcium	Target	5.2	J	mg/kg	5.2	J	1	YES	S3VEM
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Cobalt	Target	-0.031	J	mg/kg	-0.031	J	1	YES	S3VEM
Copper	Target	0.37	J	mg/kg	0.37	J	1	YES	S3VEM
Iron	Target	0.85	J	mg/kg	0.85	J	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target	0.17	J	mg/kg	0.17	J	1	YES	S3VEM
Nickel	Target	4.0	U	mg/kg	4.0	U	1	YES	S3VEM
Potassium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	2.7	J	mg/kg	2.7	J	1	YES	S3VEM
Thallium	Target	-0.25	J	mg/kg	-0.25	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	0.32	J	mg/kg	0.32	J	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project	GroupID: 48550/EPW14029/MBEK25	Lab Name: Bonner Analytical Testing Co.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 48550
Site: 738 Upper Mountain Road Site
Number of Samples: 3 soil TCLP
Analysis: Metals (ICP-AES), Hg

SDG No.: MBEK31
Laboratory: Bonner
Sampling dates: 10/23/2019
Validation SOP: HW-3a and -3c (Rev. 1)

QAPP:
Contractor: Weston Solutions
Reference: DCN: STARV-01-D-0084, October 2019

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
None

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	The site-specific QAPP did not specify the project action levels for samples from this site.

Reviewer Name(s): **Russell Arnone**

Approver's Signature: **Date: 12/03/2019**

Name:

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890 Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Revision 1) September 2016 USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following have analyte results less than CRQL. The associated CCB analytes results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQL.

Barium, Cadmium, Chromium
MBEK31, MBEK32

The following have analyte results greater than or equal MDLs and less than or equal to CRQL. The associated ICB analytes results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQL.

Cadmium
MBEK31, MBEK32

Prep Blank is reported less than CRQL and greater than MDL. Sample results are reported non-detect. Therefore, no qualifier required.

Selenium
MBEK31, MBEK32

INTERFERENCE CHECK SAMPLE

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (Aqueous) or 35% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% (Aqueous) and 50% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL (Aqueous) and 2x the CRQL (Soil/Sediment) shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

8. LABORATORY CONTROL SAMPLE

No problems were found for this criterion.

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination

and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10% (Aqueous) or 15% (Soil/Sediment). For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

No problems were found for this criterion.

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample (Soil/Sediment) with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

Sediment: No problems were found for this criterion.

Aqueous: Not applicable

ANALYSIS: MERCURY

The current SOP HW-3c (Revision 1) September 2016 USEPA Region II for the evaluation of Mercury generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time, pH (aqueous samples), or cooler temperature are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (28 days) and pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects (sample quantitation limits) will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for mercury. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be employed to establish the analytical curve. At least one of the calibration standards shall be at or below the Contract Required Quantitation Limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The calibration curves for mercury shall possess a correlation coefficient of ≥ 0.995 to ensure the linearity over the calibrated range. The percent differences calculated for all of the non-zero standards must fall within ±30% of the true

value of the standard. The y-intercept of the curve must be less than the CRQL. All sample results shall be reported from an analysis within the calibrated range. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for mercury by the analysis of an ICV solution(s). The CCV standard shall be analyzed at a frequency of every hour during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 85 – 115%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

4. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

No problems were found for this criterion.

5. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (Aqueous) or 35% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.
No problems were found for this criterion.

6. FIELD DUPLICATE:

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 20% (Aqueous) and 50% (Soil/Sediment) for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL (Aqueous) and 2x the CRQL (Soil/Sediment) shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

7. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample (Soil/Sediment) with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Spike	0.020	J	mg/L	0.020	J	1	YES	S3VEM
Barium	Spike	0.41	J	mg/L	0.41	J	1	YES	S3VEM
Cadmium	Spike	0.011	J	mg/L	0.011	J	1	YES	S3VEM
Chromium	Spike	0.021	J	mg/L	0.021	J	1	YES	S3VEM
Lead	Spike	0.022	J	mg/L	0.022	J	1	YES	S3VEM
Selenium	Spike	0.082	J	mg/L	0.082	J	1	YES	S3VEM
Silver	Spike	0.020	J	mg/L	0.020	J	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.000027	J	mg/L	0.000027	J	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Target	50.0	U	mg/L	50.0	UD*	10	YES	S3VEM
Barium	Target	1000	U	mg/L	0.24	JD	10	YES	S3VEM
Cadmium	Target	10.0	U	mg/L	0.010	JD	10	YES	S3VEM
Chromium	Target	50.0	U	mg/L	0.0075	JD	10	YES	S3VEM
Lead	Target	0.23	J	mg/L	0.23	JD	10	YES	S3VEM
Selenium	Target	10.0	U	mg/L	10.0	UD*	10	YES	S3VEM
Silver	Target	50.0	U	mg/L	50.0	UD	10	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31A	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Spike	0.21	J	mg/L	0.21	JD	10	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31D	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	U	mg/L	0.20	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31D	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Target	50.0	U	mg/L	50.0	UD	10	YES	S3VEM
Barium	Target	0.24	J	mg/L	0.24	JD	10	YES	S3VEM
Cadmium	Target	0.010	J	mg/L	0.010	JD	10	YES	S3VEM
Chromium	Target	0.0064	J	mg/L	0.0064	JD	10	YES	S3VEM
Lead	Target	0.24	J	mg/L	0.24	JD	10	YES	S3VEM
Selenium	Target	10.0	U	mg/L	10.0	UD	10	YES	S3VEM
Silver	Target	50.0	U	mg/L	50.0	UD	10	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31L	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Target	250	U	mg/L	250	UD	50	YES	S3VEM
Barium	Target	0.23	J	mg/L	0.23	JD	50	YES	S3VEM
Cadmium	Target	0.013	J	mg/L	0.013	JD	50	YES	S3VEM
Chromium	Target	250	U	mg/L	250	UD	50	YES	S3VEM
Lead	Target	0.27	J	mg/L	0.27	JD	50	YES	S3VEM
Selenium	Target	50.0	U	mg/L	50.0	UD*	50	YES	S3VEM
Silver	Target	250	U	mg/L	250	UD	50	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31S	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Spike	0.00096	J	mg/L	0.00096	J	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK31S	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date: 10/23/2019	Sample Time: 12:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Spike	0.029	J	mg/L	0.029	JD*	10	YES	S3VEM
Barium	Spike	2.4	J	mg/L	2.4	JD	10	YES	S3VEM
Cadmium	Spike	0.065	J	mg/L	0.065	JD	10	YES	S3VEM
Chromium	Spike	0.23	J	mg/L	0.23	JD	10	YES	S3VEM
Lead	Spike	0.28	J	mg/L	0.28	JD	10	YES	S3VEM
Selenium	Spike	0.13	J	mg/L	0.13	JD	10	YES	S3VEM
Silver	Spike	0.053	J	mg/L	0.053	JD	10	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK32	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	U	mg/L	0.20	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBEK32	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location: UMR001-DS01	pH:	Sample Date: 10/23/2019	Sample Time: 13:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Target	50.0	U	mg/L	50.0	UD*	10	YES	S3VEM
Barium	Target	1000	U	mg/L	0.39	JD	10	YES	S3VEM
Cadmium	Target	10.0	U	mg/L	0.020	JD	10	YES	S3VEM
Chromium	Target	50.0	U	mg/L	0.0050	JD	10	YES	S3VEM
Lead	Target	0.11	J	mg/L	0.11	JD	10	YES	S3VEM
Selenium	Target	10.0	U	mg/L	10.0	UD*	10	YES	S3VEM
Silver	Target	50.0	U	mg/L	50.0	UD	10	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBW01	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	U	mg/L	0.20	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project | **GroupID: 48550/EPW14029/MBEK31** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBW01	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Arsenic	Target	10.0	U	mg/L	10.0	U	1	YES	S3VEM
Barium	Target	200	U	mg/L	200	U	1	YES	S3VEM
Cadmium	Target	5.0	U	mg/L	5.0	U	1	YES	S3VEM
Chromium	Target	10.0	U	mg/L	10.0	U	1	YES	S3VEM
Lead	Target	10.0	U	mg/L	10.0	U	1	YES	S3VEM
Selenium	Target	35.0	U	mg/L	35.0	U	1	YES	S3VEM
Silver	Target	10.0	U	mg/L	10.0	U	1	YES	S3VEM

Sample Summary Report

Project Name: 738 UPPER MOUNTAIN ROAD SITE Project	GroupID: 48550/EPW14029/MBEK31	Lab Name: Bonner Analytical Testing Co.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
ATTN: Ms. Smita Sumbaly
S.Sumbaly@WestonSolutions.com

March 25, 2020

SUBJECT: 738 Upper Mountain, Data Validation

Dear Ms. Sumbaly,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on March 12, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #47532:

SDG #	Fraction
160-36128-2	Gamma Spectroscopy, Isotopic Uranium, Isotopic Thorium

The data validation was performed under Level IV guidelines. The analyses were validated using the following documents as applicable to each method:

- Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York, October 2019
- Multi Agency Radiological Laboratory Analytical Protocols, Manual, July 2004
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 2017

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

1,192 pages-ADV

Attachment 1

Level IV

LDC #47532 (Weston Solutions, Inc.- Edison, NJ / 738 Upper Mountain)

LDC	SDG#	DATE REC'D	(2) DATE DUE	Ra-226 (GA-01 R)		U (A-01-R)		Th (A-01-R)																											
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
B	160-36128-2	03/12/20	03/26/20	0	5	0	5	0	5																										
Total	J/PG			0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Weston Solutions\Upper Mountain\47532ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 738 Upper Mountain

LDC Report Date: March 18, 2020

Parameters: Gamma Spectroscopy

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-36128-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CF001-COMP01-01	160-36128-1	Soil	10/22/19
CF001-COMP01-02	160-36128-2	Soil	10/22/19
UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
UMR001-DS01-1224-01	160-36128-5	Soil	10/23/19
CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Gamma Spectroscopy by Method GA-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples CF001-COMP01-01 and CF001-COMP01-02 and samples UMR001-DS01-0012-01 and UMR001-DS01-0012-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	CF001-COMP01-01	CF001-COMP01-02	
Actinium-228	0.333	0.198U	Not calculable
Radium-226	0.654	0.915	33
Radium-228	0.333	0.198U	Not calculable
Bismuth-214	0.654	0.915	33
Lead-214	0.813	0.830	2
Potassium-40	2.30	2.02	13

Isotope	Activity (pCi/g)		RPD
	UMR001-DS01-0012-01	UMR001-DS01-0012-02	
Actinium-228	0.846	0.838	1
Radium-224	0.858	0.909	6
Radium-226	0.554	0.604	9
Radium-228	0.846	0.838	1
Bismuth-212	0.769U	2.08	Not calculable
Bismuth-214	0.554	0.604	9
Lead-212	0.858	0.909	6
Lead-214	0.983	0.459	73
Thallium-208	0.327	0.288	13
Potassium-40	2.33U	2.87	Not calculable

X. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
CF001-COMP01-02	Cesium-137 Lead-212 Potassium-40	0.242 pCi/g 0.335 pCi/g 1.98 pCi/g	0.200 pCi/g 0.300 pCi/g 1.50 pCi/g
UMR001-DS01-0012-01	Cesium-137 Potassium-40	0.242 pCi/g 2.35 pCi/g	0.200 pCi/g 1.50 pCi/g

The MDC was greater than the RL as listed above.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

738 Upper Mountain
Gamma Spectroscopy - Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

738 Upper Mountain
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

738 Upper Mountain
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

LDC #: 47532B~~29a~~35

SDG #: 160-36128-2

Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 3/13/20

Page: 1 of 1

Reviewer: GT

2nd Reviewer: GT

METHOD: ~~Radium 226 & Other Gamma Emitters~~ Gamma Spectroscopy (Method GA-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(1,2) (3,4)
~~X.~~	~~Carrier recovery~~	a	
XI.	Minimum detectable activity (MDA)	SW	
XII.	Sample result verification	A	
XIII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	CF001-COMP01-01	160-36128-1	Soil	10/22/19
2	CF001-COMP01-02	160-36128-2	Soil	10/22/19
3	UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
4	UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
5	UMR001-DS01-1227-01	160-36128-5	Soil	10/23/19
6	CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19
7				
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 47530835 **VALIDATION FINDINGS CHECKLIST** Page: 1 of 3
Reviewer:
2nd Reviewer:

Method: Radiochemistry(EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
II. Calibration				
Were all instruments and detectors calibration as required?	✓			
Were NIST traceable standards used for all calibrations?	✓			
Was the check source identified by activity and radionuclide?	✓			
Were check sources including background counts analyzed at the requiried frequency and within laboratory control limits?	✓			
III. Blanks				
Were blank analyses performed as required?	✓			
Were any activities detected in the blanks greater than the minimum detectable activity (MDA)? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spikes and Duplicates				
Were a matrix spike (MS) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			✓	
Were the MS percent recoveries (%R) within the QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Was a duplicate sample anaylzed at the required frequency of 5% in this SDG?	✓			
Were all duplicate sample duplicate error rations (DER) ≤1.42?.	✓			
V. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 75-125%	✓			
VI. Sample Chemical/Carrier Recovery				
Was a tracer/carrier added to each sample?			✓	
Were tracer/carrier recoveries within the QC limits?			✓	
VII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
VIII. Sample Result Verification				
Were activities adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the Minimum Detectable Activities (MDA) < RL?		✓		

Validation Area	Yes	No	NA	Findings/Comments
IX. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
X. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XI. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC# 47532B35

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Radiochemistry, Method see cover

Isotope	Activity (pCi/L)		RPD
	1	2	
Ac-228	0.333	0.198U	NC
Ra-226	0.654	0.915	33
Ra-228	0.333	0.198U	NC
Bi-214	0.654	0.915	33
Pb-214	0.813	0.830	2
K-40	2.30	2.02	13

Isotope	Activity (pCi/L)		RPD
	3	4	
Ac-228	0.846	0.838	1
Ra-224	0.858	0.909	6
Ra-226	0.554	0.604	9
Ra-228	0.846	0.838	1
Bi-212	0.769U	2.08	NC
Bi-214	0.554	0.604	9
Pb-212	0.858	0.909	6
Pb-214	0.983	0.459	73
Tl-208	0.327	0.288	13
K-40	2.33U	2.87	NC

LDC #: 47532B35

VALIDATION FINDINGS WORKSHEET
Minimum Detectable Concentrations

Reviewer:
2nd Reviewer:

METHOD: Radiochemistry (Method: See Cover)

The following sample MDCs are above the QAPP MDC:

#	Sample ID	Isotope	MDC (pCi/g)	Lab RL (pCi/g)	Qualifications
	2	Cs-137	0.242	0.200	Text
		Pb-212	0.335	0.300	
		K-40	1.98	1.50	
	3	Cs-137	0.242	0.200	
		K-40	2.35	1.50	

Comments:

LDC #: 47532B35

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: CA
2nd Reviewer: CA

METHOD: Radiochemistry (Method: see cover)

Percent recoveries (%R) for a laboratory control sample, a matrix spike and a matrix spike duplicate sample were recaluculated using the following formula:

%R = Found / True x 100 Where, Found = activity of each analyte measured in the analysis of the sample.
True = activity of each analyte in the source.

A matrix spike and matrix spike duplicate relative percent difference (RPD) was recalculated using the following formula: RER = |S-D| / √(2σ + 2σ)

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample activity
D = Duplicate sample activity

2σ = 2 Sigma

Sample ID	Type of Analysis	Analyte	Found/S (units)	True/D (units)	Recalculated %R or ~~RPD~~ RER	Reported %R or ~~RPD~~ RER	Acceptable (Y/N)
LCS	Laboratory control sample	Co-60	10.91	10.9	100	100	Y
N	Matrix spike sample						
6	Duplicate ~~RPD~~ RER	Ra-226	0.654 2σ = 0.170	1.002 2σ = 0.251	0.83	0.83	Y
N	Chemical recovery						

Comments: _____

LDC #: 47532B35

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: G
2nd reviewer: G

METHOD: Radiochemistry (Method: see cover)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?

Analyte results for Ac-228 reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{(cpm - background)}{2.22 \times E \times SA \times Vol}$

E = Counter Efficiency
SA = Self-absorbance factor
Vol = Volume of sample

Recalculation:

$\frac{0.7901\ Bq\ (27.03)}{226.6\ g} = 0.3328\ pCi/g$

#	Sample ID	Analyte	Reported Concentration (pCi/g)	Calculated Concentration (pCi/g)	Acceptable (Y/N)
	1	Ac-228	0.333	0.333	Y
	2	Ra-226	0.915	0.915	
	3	Pb-212	0.856	0.858	
	4	Pb-214	0.459	0.459	
	5	K-40	3.89	3.89	

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 738 Upper Mountain

LDC Report Date: March 18, 2020

Parameters: Isotopic Uranium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-36128-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CF001-COMP01-01	160-36128-1	Soil	10/22/19
CF001-COMP01-02	160-36128-2	Soil	10/22/19
UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
UMR001-DS01-1224-01	160-36128-5	Soil	10/23/19
CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples CF001-COMP01-01 and CF001-COMP01-02 and samples UMR001-DS01-0012-01 and UMR001-DS01-0012-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	CF001-COMP01-01	CF001-COMP01-02	
Uranium-233/234	0.510	0.536	5
Uranium-238	0.475	0.494	4

Isotope	Activity (pCi/g)		RPD
	UMR001-DS01-0012-01	UMR001-DS01-0012-02	
Uranium-233/234	0.311	0.251	21
Uranium-238	0.389	0.350	11

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

738 Upper Mountain
Isotopic Uranium - Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

738 Upper Mountain
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

738 Upper Mountain
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

LDC #: 47532B59
SDG #: 160-36128-2
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 3/13/20
Page: 1 of 1
Reviewer: GA
2nd Reviewer: GA

METHOD: Isotopic Uranium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(1,2) (3,4)
X.	Tracer Recovery	A	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	CF001-COMP01-01	160-36128-1	Soil	10/22/19
2	CF001-COMP01-02	160-36128-2	Soil	10/22/19
3	UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
4	UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
5	UMR001-DS01-1227-01	160-36128-5	Soil	10/23/19
6	CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19
7				
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 47532B59

VALIDATION FINDINGS CHECKLIST

Reviewer: CA
2nd Reviewer: CA

Method: Radiochemistry (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
II. Calibration				
Were all instruments and detectors calibration as required?	✓			
Were NIST traceable standards used for all calibrations?	✓			
Was the check source identified by activity and radionuclide?	✓			
Were check sources including background counts analyzed at the requiried frequency and within laboratory control limits?	✓			
III. Blanks				
Were blank analyses performed as required?	✓			
Were any activities detected in the blanks greater than the minimum detectable activity (MDA)? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. Matrix spikes and Duplicates				
Were a matrix spike (MS) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			✓	
Were the MS percent recoveries (%R) within the QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Was a duplicate sample anaylzed at the required frequency of 5% in this SDG?	✓			
Were all duplicate sample duplicate error rations (DER) ≤1.42?.	✓			
V. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 75-125%	✓			
VI. Sample Chemical/Carrier Recovery				
Was a tracer/carrier added to each sample?	✓			
Were tracer/carrier recoveries within the QC limits?	✓			
VII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
VIII. Sample Result Verification				
Were activities adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the Minimum Detectable Activities (MDA) < RL?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
X. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XI. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC# 47532B59

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:

2nd Reviewer:

Radiochemistry, Method see cover

Isotope	Activity (pCi/g)		RPD
	1	2	
U-233/234	0.510	0.536	5
U-238	0.475	0.494	4

Isotope	Activity (pCi/g)		RPD
	3	4	
U-233/234	0.311	0.251	21
U-238	0.389	0.350	11

V:\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\47532B59.wpd

LDC #: 47533B59

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: CA
2nd Reviewer: CA

METHOD: Radiochemistry (Method: see cover)

Percent recoveries (%R) for a laboratory control sample, a matrix spike and a matrix spike duplicate sample were recaluculated using the following formula:

%R = Found / True x 100 Where, Found = activity of each analyte measured in the analysis of the sample.
True = activity of each analyte in the source.

A matrix spike and matrix spike duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample activity
D = Duplicate sample activity

Sample ID	Type of Analysis	Analyte	Found/S (units)	True/D (units)	Recalculated %R or RPD	Reported %R or RPD	Acceptable (Y/N)
LCS	Laboratory control sample	U-233/234	6.122	6.37	96	96	Y
N	Matrix spike sample						
D	Duplicate RPD	U-238	0.5786	0.475	20	20	Y
1	Chemical recovery	U-232	7.18	6.84	105	105	Y

Comments: _____

LDC #: 47533B35C1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: G
2nd reviewer: G

METHOD: Radiochemistry (Method: See cover)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?

Analyte results for U-238 reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{(cpm - background)}{2.22 \times E \times SA \times Vol}$

E = Counter Efficiency
SA = Self-absorbance factor
Vol = Volume of sample

Recalculation:

5: $30.25 / 2.22(.2793)(.7618)(240\,min)(1) =$

0.2668 pCi/L

#	Sample ID	Analyte	Reported Concentration (pCi/L)	Calculated Concentration (pCi/L)	Acceptable (Y/N)
	1	U-233/234	0.510	509	Y
	2	U-238	0.494	0.495		
	3	U-233/234	0.311	0.312		
	4	U-238	0.350	0.351		
	5	↓	0.268	0.267	↓

Note: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 738 Upper Mountain

LDC Report Date: March 18, 2020

Parameters: Isotopic Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-36128-2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CF001-COMP01-01	160-36128-1	Soil	10/22/19
CF001-COMP01-02	160-36128-2	Soil	10/22/19
UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
UMR001-DS01-1224-01	160-36128-5	Soil	10/23/19
CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Thorium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Thorium-228	0.1069 pCi/g	All samples in SDG 160-36128-2

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks with the following exceptions:

Sample	Isotope	Reported Concentration	Modified Final Concentration
CF001-COMP01-02	Thorium-228	0.208 pCi/g	1.00U pCi/g
UMR001-DS01-0012-02	Thorium-228	0.373 pCi/g	1.00U pCi/g
UMR001-DS01-1224-01	Thorium-228	0.215 pCi/g	1.00U pCi/g

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Isotope	RER (Limits)	Flag	A or P
CF001-COMP01-01DUP (All samples in SDG 160-36128-2)	Thorium-228	1.20 (≤1.00)	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples CF001-COMP01-01 and CF001-COMP01-02 and samples UMR001-DS01-0012-01 and UMR001-DS01-0012-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	CF001-COMP01-01	CF001-COMP01-02	
Thorium-228	0.0929U	0.208	Not calculable
Thorium-230	0.703	0.740	5
Thorium-232	0.105	0.168	46

Isotope	Activity (pCi/g)		RPD
	UMR001-DS01-0012-01	UMR001-DS01-0012-02	
Thorium-228	0.172U	0.373	Not calculable
Thorium-230	0.352	0.288	20
Thorium-232	0.163U	0.261	Not calculable

X. Tracer Recovery

All tracer recoveries were within validation criteria.

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to DUP RER, data were qualified as estimated in five samples.

Due to laboratory blank contamination, data were qualified as not detected in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

738 Upper Mountain
Isotopic Thorium - Data Qualification Summary - SDG 160-36128-2

Sample	Isotope	Flag	A or P	Reason
CF001-COMP01-01 CF001-COMP01-02 UMR001-DS01-0012-01 UMR001-DS01-0012-02 UMR001-DS01-1224-01	Thorium-228	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (RER)

738 Upper Mountain
Isotopic Thorium - Laboratory Blank Data Qualification Summary - SDG 160-36128-2

Sample	Isotope	Modified Final Activity	A or P
CF001-COMP01-02	Thorium-228	1.00U pCi/g	A
UMR001-DS01-0012-02	Thorium-228	1.00U pCi/g	A
UMR001-DS01-1224-01	Thorium-228	1.00U pCi/g	A

738 Upper Mountain
Isotopic Thorium - Field Blank Data Qualification Summary - SDG 160-36128-2

No Sample Data Qualified in this SDG

LDC #: 47532B73
SDG #: 160-36128-2
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 3/13/20
Page: 1 of 1
Reviewer: CA
2nd Reviewer: CA

METHOD: Isotopic Thorium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(1,2) (3,4)
X.	Tracer Recovery	A	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	CF001-COMP01-01	160-36128-1	Soil	10/22/19
2	CF001-COMP01-02	160-36128-2	Soil	10/22/19
3	UMR001-DS01-0012-01	160-36128-3	Soil	10/23/19
4	UMR001-DS01-0012-02	160-36128-4	Soil	10/23/19
5	UMR001-DS01-1227-01	160-36128-5	Soil	10/23/19
6	CF001-COMP01-01DUP	160-36128-1DUP	Soil	10/22/19
7				
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 41535B73 **VALIDATION FINDINGS CHECKLIST**

Reviewer: CK
2nd Reviewer: CK

Method: Radiochemistry (EPA Method See cover)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
II. Calibration				
Were all instruments and detectors calibration as required?	✓			
Were NIST traceable standards used for all calibrations?	✓			
Was the check source identified by activity and radionuclide?	✓			
Were check sources including background counts analyzed at the requiried frequency and within laboratory control limits?	✓			
III. Blanks				
Were blank analyses performed as required?	✓			
Were any activities detected in the blanks greater than the minimum detectable activity (MDA)? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix spikes and Duplicates				
Were a matrix spike (MS) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.			✓	
Were the MS percent recoveries (%R) within the QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			✓	
Was a duplicate sample anaylzed at the required frequency of 5% in this SDG?	✓			
Were all duplicate sample duplicate error rations (DER) <1.42?.		✓		
V. Laboratory control samples				
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 75-125%	✓			
VI. Sample Chemical/Carrier Recovery				
Was a tracer/carrier added to each sample?	✓			
Were tracer/carrier recoveries within the QC limits?	✓			
VII. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
VIII. Sample Result Verification				
Were activities adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were the Minimum Detectable Activities (MDA) < RL?	✓			

Validation Area	Yes	No	NA	Findings/Comments
IX. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
X. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.				
XI. Field blanks				
Field blanks were identified in this SDG.				
Target analytes were detected in the field blanks.				

LDC #: 47532B73

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: Radiochemistry, Method See Cover

Conc. units: pCi/g **Associated Samples:** All

Isotope	Blank ID	Blank Action Limit	Sample Identification										
	PB		2	4	5								
Th-228	0.1069		0.208 / 1.00	0.373 / 1.00	0.215 / 1.00								

LDC #: 47530B3B

VALIDATION FINDINGS WORKSHEET
Duplicate Analysis

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Radiochemistry (Method: gamma)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a duplicate sample analyzed the required frequency of 1/20 in this SDG?

Y N N/A Were all duplicate sample ~~relative percent differences (RPD)~~ RER ≤ 1 ? A control limit of ± RDL for aqueous and ± 2X RDL for soil samples was used for sample values that were <5X the RDL, including the case when only one of the duplicate sample values was <5X RDL.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Date	Duplicate ID	Matrix	Analyte	~~RPD~~ RER (Limits)	Associated Samples	Qualifications
		6		Th-228	1.20 (≤1.00)	All	J/UJ/A (RE(10)

Comments: _____

LDC# 47532B73

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:

2nd Reviewer:

Radiochemistry, Method see cover

Isotope	Activity (pCi/g)		RPD
	1	2	
Th-228	0.0929U	0.208	NC
Th-230	0.703	0.740	5
Th-232	0.105	0.168	46

Isotope	Activity (pCi/g)		RPD
	3	4	
Th-228	0.172U	0.373	NC
Th-230	0.352	0.288	20
Th-232	0.163U	0.261	NC

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LDC #: 47532B73

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Radiochemistry (Method: see cover)

Percent recoveries (%R) for a laboratory control sample, a matrix spike and a matrix spike duplicate sample were recaluculated using the following formula:

%R = Found / True x 100 Where, Found = activity of each analyte measured in the analysis of the sample.
True = activity of each analyte in the source.

RER = |S-D| / (S2σ + D2σ)

A matrix spike and matrix spike duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample activity
D = Duplicate sample activity

2σ = 2 sigma

Sample ID	Type of Analysis	Analyte	Found/S (units)	True/D (units)	Recalculated %R or RPD (RER)	Reported %R or RPD (RER)	Acceptable (Y/N)
LCS	Laboratory control sample	Th-230	22.46	24.5	92	92	Y
N	Matrix spike sample						
D	Duplicate RPD RER	Th-228	0.0929 2σ = 0.096	0.3524 2σ = 0.126	1.20	1.20	Y
C	Chemical recovery	Th-229	5.11	5.98	~~84~~ 85.5	85.5	Y

Comments: _____

LDC #: 47530B73

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: Radiochemistry (Method: see cover)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?

Analyte results for Th-230 reported with a positive detect were recalculated and verified using the following equation:

Concentration = $\frac{(cpm - background)}{2.22 \times E \times SA \times Vol}$

E = Counter Efficiency
SA = Self-absorbance factor
Vol = Volume of sample

Recalculation:

$60 / 2.22(0.997)(0.221)(240\,min)(0.997\,g)(0.8548) - 0.095339$

$= 0.70247\,pCi/g$

#	Sample ID	Analyte	Reported Concentration (pCi/g)	Calculated Concentration (pCi/g)	Acceptable (Y/N)
	1	Th-230	0.703	0.702	Y
	2	Th-228	0.208	0.208	
	3	Th-230	0.352	0.352	
	4	Th-230	0.261	0.261	
	5	Th-228	0.215	0.215	

Note: _____

Client Sample ID: CF001-COMP01-01

Lab Sample ID: 160-36128-1

Date Collected: 10/22/19 15:50
Matrix: Solid
Date Received: 10/24/19 13:48

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.0929	U UJ	0.0905	0.0908	1.00	0.119	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-230	**0.703**		0.190	0.199	1.00	0.138	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-232	**0.105**		0.0713	0.0718	1.00	0.0717	pCi/g	11/04/19 19:46	11/14/19 12:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*85.5*		*30 - 110*	*11/04/19 19:46*	*11/14/19 12:32*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.510**		0.129	0.136	1.00	0.0570	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-235/236	0.0374	U	0.0402	0.0403	1.00	0.0482	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-238	**0.475**		0.124	0.130	1.00	0.0448	pCi/g	11/04/19 20:10	11/08/19 14:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*105*		*30 - 110*	*11/04/19 20:10*	*11/08/19 14:32*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.333**		0.171	0.174	1.00	0.181	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Bismuth-212	-0.394	U	0.820	0.821	3.00	1.50	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Bismuth-214	**0.654**		0.155	0.170	1.00	0.128	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Cesium-137	-0.0317	U	0.0577	0.0578	0.200	0.151	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Lead-212	0.0531	U	0.151	0.151	0.300	0.255	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Lead-214	**0.813**		0.157	0.179	1.00	0.119	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Potassium-40	**2.30**		1.19	1.21	1.50	1.28	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Protactinium-234	0.102	U	0.294	0.294	1.50	0.496	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Radium-224	0.0531	U	0.151	0.151	5.00	0.255	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Radium-226	**0.654**		0.155	0.170	1.00	0.128	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Radium-228	**0.333**		0.171	0.174	1.00	0.181	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Thallium-208	0.0672	U	0.0762	0.0765	0.200	0.0892	pCi/g	10/30/19 21:29	11/24/19 06:26	1
Thorium-234	0.237	U	0.574	0.574	4.00	2.16	pCi/g	10/30/19 21:29	11/24/19 06:26	1

Client Sample ID: CF001-COMP01-02

Lab Sample ID: 160-36128-2

Date Collected: 10/22/19 15:55
Matrix: Solid
Date Received: 10/24/19 13:48

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.208**	1.00 UJ	0.110	0.111	1.00	0.110	pCi/g	11/04/19 19:46	11/15/19 12:19	1
Thorium-230	**0.740**		0.194	0.204	1.00	0.146	pCi/g	11/04/19 19:46	11/15/19 12:19	1
Thorium-232	**0.168**		0.0872	0.0883	1.00	0.0744	pCi/g	11/04/19 19:46	11/15/19 12:19	1

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Client Sample ID: CF001-COMP01-02

Lab Sample ID: 160-36128-2
Date Collected: 10/22/19 15:55
Matrix: Solid
Date Received: 10/24/19 13:48

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	79.4		30 - 110	11/04/19 19:46	11/15/19 12:19	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.536**		0.134	0.141	1.00	0.0401	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-235/236	0.0361	U	0.0419	0.0420	1.00	0.0577	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-238	**0.494**		0.128	0.135	1.00	0.0400	pCi/g	11/04/19 20:10	11/08/19 14:32	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	83.0		30 - 110	11/04/19 20:10	11/08/19 14:32	1

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.198	U	0.190	0.191	1.00	0.298	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Bismuth-212	-0.0493	U	1.34	1.34	3.00	2.40	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Bismuth-214	**0.915**		0.221	0.240	1.00	0.130	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Cesium-137	-0.0346	U	0.140	0.140	0.200	0.242	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Lead-212	0.0100	U	0.196	0.196	0.300	0.335	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Lead-214	**0.830**		0.186	0.204	1.00	0.228	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Potassium-40	**2.02**		1.99	2.00	1.50	1.98	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Protactinium-234	0.0772	U	0.109	0.110	1.50	0.630	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Radium-224	0.0100	U	0.196	0.196	5.00	0.335	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Radium-226	**0.915**		0.221	0.240	1.00	0.130	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Radium-228	0.198	U	0.190	0.191	1.00	0.298	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Thallium-208	0.0797	U	0.138	0.139	0.200	0.124	pCi/g	10/30/19 21:29	11/24/19 06:27	1
Thorium-234	-1.60	U	1.04	1.05	4.00	2.54	pCi/g	10/30/19 21:29	11/24/19 06:27	1

Client Sample ID: UMR001-DS01-0012-01

Lab Sample ID: 160-36128-3
Date Collected: 10/23/19 12:20
Matrix: Solid
Date Received: 10/24/19 13:48

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	0.172	U UJ	0.170	0.171	1.00	0.259	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-230	**0.352**		0.200	0.202	1.00	0.247	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-232	0.163	U	0.161	0.161	1.00	0.252	pCi/g	11/04/19 19:46	11/14/19 12:32	1

Tracer	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Thorium-229	62.4		30 - 110	11/04/19 19:46	11/14/19 12:32	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.311**		0.101	0.105	1.00	0.0591	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-235/236	0.00979	U	0.0196	0.0196	1.00	0.0294	pCi/g	11/04/19 20:10	11/08/19 14:32	1

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Client Sample ID: UMR001-DS01-0012-01

Lab Sample ID: 160-36128-3

Date Collected: 10/23/19 12:20
Date Received: 10/24/19 13:48

Matrix: Solid

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-238	**0.389**		0.111	0.116	1.00	0.0440	pCi/g	11/04/19 20:10	11/08/19 14:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*87.7*		*30 - 110*	*11/04/19 20:10*	*11/08/19 14:32*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.846**		0.317	0.329	1.00	0.386	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Bismuth-212	0.769	U	1.31	1.31	3.00	2.22	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Bismuth-214	**0.554**		0.192	0.200	1.00	0.190	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Cesium-137	-0.108	U	0.0947	0.0954	0.200	0.242	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Lead-212	**0.858**		0.167	0.200	0.300	0.148	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Lead-214	**0.983**		0.207	0.231	1.00	0.166	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Potassium-40	2.33	U	2.09	2.11	1.50	2.35	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Protactinium-234	0.250	U	0.189	0.191	1.50	0.475	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Radium-224	**0.858**		0.167	0.200	5.00	0.148	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Radium-226	**0.554**		0.192	0.200	1.00	0.190	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Radium-228	**0.846**		0.317	0.329	1.00	0.386	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Thallium-208	**0.327**		0.120	0.125	0.200	0.101	pCi/g	10/30/19 21:29	11/24/19 06:30	1
Thorium-234	0.308	U	0.758	0.759	4.00	1.28	pCi/g	10/30/19 21:29	11/24/19 06:30	1

Client Sample ID: UMR001-DS01-0012-02

Lab Sample ID: 160-36128-4

Date Collected: 10/23/19 12:25
Date Received: 10/24/19 13:48

Matrix: Solid

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.373**	1,00U5	0.159	0.162	1.00	0.142	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-230	**0.288**		0.159	0.161	1.00	0.160	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-232	**0.261**		0.124	0.125	1.00	0.101	pCi/g	11/04/19 19:46	11/14/19 12:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*55.0*		*30 - 110*	*11/04/19 19:46*	*11/14/19 12:32*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.251**		0.0904	0.0928	1.00	0.0523	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-235/236	0.0171	U	0.0280	0.0280	1.00	0.0472	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-238	**0.350**		0.105	0.109	1.00	0.0378	pCi/g	11/04/19 20:10	11/08/19 14:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*86.8*		*30 - 110*	*11/04/19 20:10*	*11/08/19 14:32*	*1*

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Client Sample ID: UMR001-DS01-0012-02 — Lab Sample ID: 160-36128-4

Date Collected: 10/23/19 12:25 **Matrix: Solid**
Date Received: 10/24/19 13:48

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	**0.838**		0.281	0.293	1.00	0.169	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Bismuth-212	**2.08**		0.785	0.815	3.00	0.522	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Bismuth-214	**0.604**		0.228	0.237	1.00	0.213	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Cesium-137	-0.0543	U	0.102	0.102	0.200	0.173	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Lead-212	**0.909**		0.165	0.202	0.300	0.164	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Lead-214	**0.459**		0.156	0.163	1.00	0.161	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Potassium-40	**2.87**		1.09	1.13	1.50	0.912	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Protactinium-234	-0.00994	U	0.0230	0.0231	1.50	0.606	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Radium-224	**0.909**		0.165	0.202	5.00	0.164	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Radium-226	**0.604**		0.228	0.237	1.00	0.213	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Radium-228	**0.838**		0.281	0.293	1.00	0.169	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Thallium-208	**0.288**		0.0836	0.0888	0.200	0.0611	pCi/g	10/30/19 21:29	11/24/19 06:32	1
Thorium-234	0.590	U	0.571	0.575	4.00	2.43	pCi/g	10/30/19 21:29	11/24/19 06:32	1

Client Sample ID: UMR001-DS01-1224-01 — Lab Sample ID: 160-36128-5

Date Collected: 10/23/19 13:00 **Matrix: Solid**
Date Received: 10/24/19 13:48

Method: A-01-R - Isotopic Thorium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Thorium-228	**0.215**	1.00 U3	0.150	0.151	1.00	0.186	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-230	**0.447**		0.195	0.198	1.00	0.171	pCi/g	11/04/19 19:46	11/14/19 12:32	1
Thorium-232	**0.121**		0.0907	0.0912	1.00	0.0871	pCi/g	11/04/19 19:46	11/14/19 12:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Thorium-229	*48.3*		*30 - 110*	*11/04/19 19:46*	*11/14/19 12:32*	*1*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Uranium-233/234	**0.333**		0.111	0.115	1.00	0.0666	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-235/236	0.00276	U	0.0241	0.0241	1.00	0.0683	pCi/g	11/04/19 20:10	11/08/19 14:32	1
Uranium-238	**0.268**		0.101	0.103	1.00	0.0696	pCi/g	11/04/19 20:10	11/08/19 14:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*76.2*		*30 - 110*	*11/04/19 20:10*	*11/08/19 14:32*	*1*

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Actinium 228	0.254	U	0.411	0.412	1.00	0.467	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Bismuth-212	-0.464	U	2.23	2.23	3.00	2.12	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Bismuth-214	0.0802	U	0.128	0.128	1.00	0.537	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Cesium-137	-0.0528	U	0.183	0.183	0.200	0.175	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Lead-212	**0.297**		0.131	0.136	0.300	0.185	pCi/g	10/30/19 21:29	11/24/19 06:34	1

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Client Sample ID: UMR001-DS01-1224-01
Date Collected: 10/23/19 13:00
Date Received: 10/24/19 13:48

Lab Sample ID: 160-36128-5
Matrix: Solid

Method: GA-01-R - Radium-226 & Other Gamma Emitters (GS) (Continued)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lead-214	**0.495**		0.172	0.180	1.00	0.190	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Potassium-40	**3.89**		1.27	1.33	1.50	1.25	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Protactinium-234	-0.167	U	0.489	0.490	1.50	0.819	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Radium-224	**0.297**		0.131	0.136	5.00	0.185	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Radium-226	0.0802	U	0.128	0.128	1.00	0.537	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Radium-228	0.254	U	0.411	0.412	1.00	0.467	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Thallium-208	0.119	U	0.140	0.140	0.200	0.134	pCi/g	10/30/19 21:29	11/24/19 06:34	1
Thorium-234	-1.06	U	1.78	1.78	4.00	3.02	pCi/g	10/30/19 21:29	11/24/19 06:34	1

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SDG: 160-36128-2

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Uncertainy	MDC	Units
CF001-COMP01-01	160-36128-1	Protactinium-234	11/24/2019	0.102	U		U	0.294	0.496	pCi/g
CF001-COMP01-01	160-36128-1	Thorium-234	11/24/2019	0.237	U		U	0.574	2.16	pCi/g
CF001-COMP01-01	160-36128-1	Thallium-208	11/24/2019	0.0672	U		U	0.0765	0.0892	pCi/g
CF001-COMP01-01	160-36128-1	Radium-228	11/24/2019	0.333				0.174	0.181	pCi/g
CF001-COMP01-01	160-36128-1	Radium-224	11/24/2019	0.0531	U		U	0.151	0.255	pCi/g
CF001-COMP01-01	160-36128-1	Potassium-40	11/24/2019	2.30				1.21	1.28	pCi/g
CF001-COMP01-01	160-36128-1	Lead-214	11/24/2019	0.813				0.179	0.119	pCi/g
CF001-COMP01-01	160-36128-1	Lead-212	11/24/2019	0.0531	U		U	0.151	0.255	pCi/g
CF001-COMP01-01	160-36128-1	Cesium-137	11/24/2019	-0.0317	U		U	0.0578	0.151	pCi/g
CF001-COMP01-01	160-36128-1	Thorium-230	11/14/2019	0.703				0.199	0.138	pCi/g
CF001-COMP01-01	160-36128-1	Radium-226	11/24/2019	0.654				0.170	0.128	pCi/g
CF001-COMP01-01	160-36128-1	Thorium-228	11/14/2019	0.0929	U	UJ	UJ	0.0908	0.119	pCi/g
CF001-COMP01-01	160-36128-1	Bismuth-214	11/24/2019	0.654				0.170	0.128	pCi/g
CF001-COMP01-01	160-36128-1	Thorium-232	11/14/2019	0.105				0.0718	0.0717	pCi/g
CF001-COMP01-01	160-36128-1	Uranium-233/234	11/8/2019	0.510				0.136	0.0570	pCi/g
CF001-COMP01-01	160-36128-1	Uranium-235/236	11/8/2019	0.0374	U		U	0.0403	0.0482	pCi/g
CF001-COMP01-01	160-36128-1	Uranium-238	11/8/2019	0.475				0.130	0.0448	pCi/g
CF001-COMP01-01	160-36128-1	Actinium 228	11/24/2019	0.333				0.174	0.181	pCi/g
CF001-COMP01-01	160-36128-1	Bismuth-212	11/24/2019	-0.394	U		U	0.821	1.50	pCi/g

SDG: 160-36128-2

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Uncertainy	MDC	Units
CF001-COMP01-02	160-36128-2	Thorium-232	11/15/2019	0.168				0.0883	0.0744	pCi/g
CF001-COMP01-02	160-36128-2	Lead-212	11/24/2019	0.0100	U		U	0.196	0.335	pCi/g
CF001-COMP01-02	160-36128-2	Thorium-234	11/24/2019	-1.60	U		U	1.05	2.54	pCi/g
CF001-COMP01-02	160-36128-2	Thallium-208	11/24/2019	0.0797	U		U	0.139	0.124	pCi/g
CF001-COMP01-02	160-36128-2	Radium-228	11/24/2019	0.198	U		U	0.191	0.298	pCi/g
CF001-COMP01-02	160-36128-2	Radium-226	11/24/2019	0.915				0.240	0.130	pCi/g
CF001-COMP01-02	160-36128-2	Radium-224	11/24/2019	0.0100	U		U	0.196	0.335	pCi/g
CF001-COMP01-02	160-36128-2	Protactinium-234	11/24/2019	0.0772	U		U	0.110	0.630	pCi/g
CF001-COMP01-02	160-36128-2	Potassium-40	11/24/2019	2.02				2.00	1.98	pCi/g
CF001-COMP01-02	160-36128-2	Lead-214	11/24/2019	0.830				0.204	0.228	pCi/g
CF001-COMP01-02	160-36128-2	Thorium-228	11/15/2019	1.00		UJ	UJ	0.111	0.110	pCi/g
CF001-COMP01-02	160-36128-2	Thorium-230	11/15/2019	0.740				0.204	0.146	pCi/g
CF001-COMP01-02	160-36128-2	Bismuth-214	11/24/2019	0.915				0.240	0.130	pCi/g
CF001-COMP01-02	160-36128-2	Bismuth-212	11/24/2019	-0.0493	U		U	1.34	2.40	pCi/g
CF001-COMP01-02	160-36128-2	Actinium 228	11/24/2019	0.198	U		U	0.191	0.298	pCi/g
CF001-COMP01-02	160-36128-2	Uranium-238	11/8/2019	0.494				0.135	0.0400	pCi/g
CF001-COMP01-02	160-36128-2	Uranium-233/234	11/8/2019	0.536				0.141	0.0401	pCi/g
CF001-COMP01-02	160-36128-2	Cesium-137	11/24/2019	-0.0346	U		U	0.140	0.242	pCi/g
CF001-COMP01-02	160-36128-2	Uranium-235/236	11/8/2019	0.0361	U		U	0.0420	0.0577	pCi/g

SDG: 160-36128-2

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Uncertainy	MDC	Units
UMR001-DS01-0012-0	160-36128-3	Thorium-228	11/14/2019	0.172	U	UJ	UJ	0.171	0.259	pCi/g
UMR001-DS01-0012-0	160-36128-3	Uranium-238	11/8/2019	0.389				0.116	0.0440	pCi/g
UMR001-DS01-0012-0	160-36128-3	Uranium-235/236	11/8/2019	0.00979	U		U	0.0196	0.0294	pCi/g
UMR001-DS01-0012-0	160-36128-3	Uranium-233/234	11/8/2019	0.311				0.105	0.0591	pCi/g
UMR001-DS01-0012-0	160-36128-3	Thorium-232	11/14/2019	0.163	U		U	0.161	0.252	pCi/g
UMR001-DS01-0012-0	160-36128-3	Bismuth-214	11/24/2019	0.554				0.200	0.190	pCi/g
UMR001-DS01-0012-0	160-36128-3	Bismuth-212	11/24/2019	0.769	U		U	1.31	2.22	pCi/g
UMR001-DS01-0012-0	160-36128-3	Thorium-230	11/14/2019	0.352				0.202	0.247	pCi/g
UMR001-DS01-0012-0	160-36128-3	Thallium-208	11/24/2019	0.327				0.125	0.101	pCi/g
UMR001-DS01-0012-0	160-36128-3	Actinium 228	11/24/2019	0.846				0.329	0.386	pCi/g
UMR001-DS01-0012-0	160-36128-3	Thorium-234	11/24/2019	0.308	U		U	0.759	1.28	pCi/g
UMR001-DS01-0012-0	160-36128-3	Radium-228	11/24/2019	0.846				0.329	0.386	pCi/g
UMR001-DS01-0012-0	160-36128-3	Radium-226	11/24/2019	0.554				0.200	0.190	pCi/g
UMR001-DS01-0012-0	160-36128-3	Radium-224	11/24/2019	0.858				0.200	0.148	pCi/g
UMR001-DS01-0012-0	160-36128-3	Protactinium-234	11/24/2019	0.250	U		U	0.191	0.475	pCi/g
UMR001-DS01-0012-0	160-36128-3	Potassium-40	11/24/2019	2.33	U		U	2.11	2.35	pCi/g
UMR001-DS01-0012-0	160-36128-3	Lead-214	11/24/2019	0.983				0.231	0.166	pCi/g
UMR001-DS01-0012-0	160-36128-3	Lead-212	11/24/2019	0.858				0.200	0.148	pCi/g
UMR001-DS01-0012-0	160-36128-3	Cesium-137	11/24/2019	-0.108	U		U	0.0954	0.242	pCi/g

SDG: 160-36128-2

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Uncertainy	MDC	Units
UMR001-DS01-0012-0	160-36128-4	Protactinium-234	11/24/2019	-0.00994	U		U	0.0231	0.606	pCi/g
UMR001-DS01-0012-0	160-36128-4	Lead-212	11/24/2019	0.909				0.202	0.164	pCi/g
UMR001-DS01-0012-0	160-36128-4	Thorium-234	11/24/2019	0.590	U		U	0.575	2.43	pCi/g
UMR001-DS01-0012-0	160-36128-4	Thallium-208	11/24/2019	0.288				0.0888	0.0611	pCi/g
UMR001-DS01-0012-0	160-36128-4	Radium-228	11/24/2019	0.838				0.293	0.169	pCi/g
UMR001-DS01-0012-0	160-36128-4	Radium-224	11/24/2019	0.909				0.202	0.164	pCi/g
UMR001-DS01-0012-0	160-36128-4	Potassium-40	11/24/2019	2.87				1.13	0.912	pCi/g
UMR001-DS01-0012-0	160-36128-4	Lead-214	11/24/2019	0.459				0.163	0.161	pCi/g
UMR001-DS01-0012-0	160-36128-4	Thorium-228	11/14/2019	1.00		UJ	UJ	0.162	0.142	pCi/g
UMR001-DS01-0012-0	160-36128-4	Thorium-232	11/14/2019	0.261				0.125	0.101	pCi/g
UMR001-DS01-0012-0	160-36128-4	Bismuth-214	11/24/2019	0.604				0.237	0.213	pCi/g
UMR001-DS01-0012-0	160-36128-4	Bismuth-212	11/24/2019	2.08				0.815	0.522	pCi/g
UMR001-DS01-0012-0	160-36128-4	Thorium-230	11/14/2019	0.288				0.161	0.160	pCi/g
UMR001-DS01-0012-0	160-36128-4	Actinium 228	11/24/2019	0.838				0.293	0.169	pCi/g
UMR001-DS01-0012-0	160-36128-4	Uranium-238	11/8/2019	0.350				0.109	0.0378	pCi/g
UMR001-DS01-0012-0	160-36128-4	Uranium-235/236	11/8/2019	0.0171	U		U	0.0280	0.0472	pCi/g
UMR001-DS01-0012-0	160-36128-4	Uranium-233/234	11/8/2019	0.251				0.0928	0.0523	pCi/g
UMR001-DS01-0012-0	160-36128-4	Radium-226	11/24/2019	0.604				0.237	0.213	pCi/g
UMR001-DS01-0012-0	160-36128-4	Cesium-137	11/24/2019	-0.0543	U		U	0.102	0.173	pCi/g

SDG: 160-36128-2

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Uncertainy	MDC	Units
UMR001-DS01-1224-0	160-36128-5	Potassium-40	11/24/2019	3.89				1.33	1.25	pCi/g
UMR001-DS01-1224-0	160-36128-5	Protactinium-234	11/24/2019	-0.167	U		U	0.490	0.819	pCi/g
UMR001-DS01-1224-0	160-36128-5	Radium-224	11/24/2019	0.297				0.136	0.185	pCi/g
UMR001-DS01-1224-0	160-36128-5	Radium-226	11/24/2019	0.0802	U		U	0.128	0.537	pCi/g
UMR001-DS01-1224-0	160-36128-5	Radium-228	11/24/2019	0.254	U		U	0.412	0.467	pCi/g
UMR001-DS01-1224-0	160-36128-5	Lead-214	11/24/2019	0.495				0.180	0.190	pCi/g
UMR001-DS01-1224-0	160-36128-5	Thorium-228	11/14/2019	1.00		UJ	UJ	0.151	0.186	pCi/g
UMR001-DS01-1224-0	160-36128-5	Uranium-238	11/8/2019	0.268				0.103	0.0696	pCi/g
UMR001-DS01-1224-0	160-36128-5	Thallium-208	11/24/2019	0.119	U		U	0.140	0.134	pCi/g
UMR001-DS01-1224-0	160-36128-5	Lead-212	11/24/2019	0.297				0.136	0.185	pCi/g
UMR001-DS01-1224-0	160-36128-5	Cesium-137	11/24/2019	-0.0528	U		U	0.183	0.175	pCi/g
UMR001-DS01-1224-0	160-36128-5	Bismuth-214	11/24/2019	0.0802	U		U	0.128	0.537	pCi/g
UMR001-DS01-1224-0	160-36128-5	Actinium 228	11/24/2019	0.254	U		U	0.412	0.467	pCi/g
UMR001-DS01-1224-0	160-36128-5	Uranium-235/236	11/8/2019	0.00276	U		U	0.0241	0.0683	pCi/g
UMR001-DS01-1224-0	160-36128-5	Uranium-233/234	11/8/2019	0.333				0.115	0.0666	pCi/g
UMR001-DS01-1224-0	160-36128-5	Thorium-232	11/14/2019	0.121				0.0912	0.0871	pCi/g
UMR001-DS01-1224-0	160-36128-5	Thorium-230	11/14/2019	0.447				0.198	0.171	pCi/g
UMR001-DS01-1224-0	160-36128-5	Thorium-234	11/24/2019	-1.06	U		U	1.78	3.02	pCi/g
UMR001-DS01-1224-0	160-36128-5	Bismuth-212	11/24/2019	-0.464	U		U	2.23	2.12	pCi/g

738 Mountain - LDC# 47532

SDG: 160-36128-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	RPT_LIMIT_MDC	MDL	Units
CF001-COMP01-01	160-36128-1	U-233	11/12/2019	0.0026			U	0.0052	0.0026	mg/Kg
CF001-COMP01-01	160-36128-1	U-234	11/12/2019	0.0026	F1	UJ	UJ	0.0052	0.0026	mg/Kg
CF001-COMP01-01	160-36128-1	Thorium	11/11/2019	0.014	J F1	J	UJ	0.020	0.014	pCi/g
CF001-COMP01-01	160-36128-1	Thorium	11/11/2019	0.13	J F1	J	J	0.18	0.12	mg/Kg
CF001-COMP01-01	160-36128-1	U-238	11/12/2019	1.4	^ B F1	J	J	0.0052	0.0026	mg/Kg
CF001-COMP01-01	160-36128-1	U-235	11/12/2019	0.012	F1	J	J	0.0052	0.0026	mg/Kg
CF001-COMP01-01	160-36128-1	U-236	11/12/2019	0.0026			U	0.0052	0.0026	mg/Kg

SDG: 160-36128-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	RPT_LIMIT_MDC	MDL	Units
CF001-COMP01-02	160-36128-2	U-235	11/12/2019	0.0091		J	J	0.0055	0.0027	mg/Kg
CF001-COMP01-02	160-36128-2	Thorium	11/11/2019	0.13		R	R	0.19	0.13	mg/Kg
CF001-COMP01-02	160-36128-2	U-236	11/12/2019	0.0027			U	0.0055	0.0027	mg/Kg
CF001-COMP01-02	160-36128-2	U-234	11/12/2019	0.0027		UJ	UJ	0.0055	0.0027	mg/Kg
CF001-COMP01-02	160-36128-2	U-233	11/12/2019	0.0027			U	0.0055	0.0027	mg/Kg
CF001-COMP01-02	160-36128-2	Thorium	11/11/2019	0.014		R	R	0.021	0.014	pCi/g
CF001-COMP01-02	160-36128-2	U-238	11/12/2019	1.1	^ B	J	J	0.0055	0.0027	mg/Kg

SDG: 160-36128-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	RPT_LIMIT_MDC	MDL	Units
UMR001-DS01-0012-01	160-36128-3	U-235	11/12/2019	0.013				0.0059	0.0030	mg/Kg
UMR001-DS01-0012-01	160-36128-3	U-238	11/12/2019	1.7	^ B			0.0059	0.0030	mg/Kg
UMR001-DS01-0012-01	160-36128-3	U-233	11/12/2019	0.0030			U	0.0059	0.0030	mg/Kg
UMR001-DS01-0012-01	160-36128-3	Thorium	11/11/2019	0.13			U	0.19	0.13	mg/Kg
UMR001-DS01-0012-01	160-36128-3	Thorium	11/11/2019	0.014			U	0.021	0.014	pCi/g
UMR001-DS01-0012-01	160-36128-3	U-234	11/12/2019	0.0030			U	0.0059	0.0030	mg/Kg
UMR001-DS01-0012-01	160-36128-3	U-236	11/12/2019	0.0030			U	0.0059	0.0030	mg/Kg

SDG: 160-36128-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	RPT_LIMIT_MDC	MDL	Units
UMR001-DS01-0012-02	160-36128-4	Thorium	11/11/2019	0.015			U	0.022	0.015	pCi/g
UMR001-DS01-0012-02	160-36128-4	Thorium	11/11/2019	0.13			U	0.20	0.13	mg/Kg
UMR001-DS01-0012-02	160-36128-4	U-238	11/12/2019	0.25	^ B			0.0057	0.0028	mg/Kg
UMR001-DS01-0012-02	160-36128-4	U-234	11/12/2019	0.0028			U	0.0057	0.0028	mg/Kg
UMR001-DS01-0012-02	160-36128-4	U-235	11/12/2019	0.0028			U	0.0057	0.0028	mg/Kg
UMR001-DS01-0012-02	160-36128-4	U-236	11/12/2019	0.0028			U	0.0057	0.0028	mg/Kg
UMR001-DS01-0012-02	160-36128-4	U-233	11/12/2019	0.0028			U	0.0057	0.0028	mg/Kg

SDG: 160-36128-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	RPT_LIMIT_MDC	MDL	Units
UMR001-DS01-1224-01	160-36128-5	U-238	11/12/2019	0.83	^ B			0.0057	0.0029	mg/Kg
UMR001-DS01-1224-01	160-36128-5	U-234	11/12/2019	0.0029			U	0.0057	0.0029	mg/Kg
UMR001-DS01-1224-01	160-36128-5	U-233	11/12/2019	0.0029			U	0.0057	0.0029	mg/Kg
UMR001-DS01-1224-01	160-36128-5	U-235	11/12/2019	0.0068				0.0057	0.0029	mg/Kg
UMR001-DS01-1224-01	160-36128-5	Thorium	11/11/2019	0.013			U	0.020	0.013	pCi/g
UMR001-DS01-1224-01	160-36128-5	U-236	11/12/2019	0.0029			U	0.0057	0.0029	mg/Kg
UMR001-DS01-1224-01	160-36128-5	Thorium	11/11/2019	0.12			U	0.18	0.12	mg/Kg

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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

START V-01-F-0065

TRANSMITTAL MEMO

To:	Mr. Eric Daly, On-Scene Coordinator Superfund and Emergency Management Division U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer START V, Region II
Subject:	738 Upper Mountain Road Site Data Validation Assessment
Date:	June 1, 2020

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TCLP Herbicides	2 Samples
RCRA Characteristics	2 Samples

- Matrices and Number of Samples

Soil	2 Samples

- Sampling Date: October 23, 2019

The final data assessment narrative and original analytical data package are attached.

cc:	START V SPM:	Bernard Nwosu
	START V SITE FILE TD #:	TO-0032-0040
	START V ANALYTICAL TD #:	TO-0032-0083
	TASK#:	1083

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **June 1, 2020**

TO: **Mr. Eric Daly**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
START V Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to the U.S. Environmental Protection Agency, Region II (EPA) standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Holding Time
Calibration, Initial	Calibration, Continuing
Blanks	Laboratory Control Sample
Surrogate Recovery	Sample Quantification
Compound Identification	Raw Data

Summary of Results

	TCLP Herbicides	RCRA Characteristics
Acceptable as Submitted		
Acceptable with Comments	X	X
Unacceptable, Action Pending		
Unacceptable		

Data Reviewed by: Smita Sumbaly Date: 6/1/2020

Approved By: Date: 6/1/2020

Area Code/Phone No.: (732) 585-4410

NARRATIVE

PCS No. 1083

SITE NAME: 738 Upper Mountain Road Site
738 Upper Mountain Road
Lewiston, Niagara County
New York

Laboratory Name: Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045.

INTRODUCTION:

The laboratory's portion of this case consisted of two soil samples, collected on October 23, 2019 for Resource Conservation and Recovery Act (RCRA) Characteristics and Toxicity Characteristic Leaching Procedure (TCLP) Herbicides. analyses. The Eurofins TestAmerica job number is 160-36128-1.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with analyses of TCLP Herbicides and RCRA Characteristics.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Any statistical measures used to support the following conclusions are attached so that the information may be reviewed by others.

Organic:

Y Holding Time	Y Calibration, Initial
Y Calibration, Continuing	Y Standards
Y Blank	Y Chromatography
Y Surrogate Recovery	Y Data Completeness
Y Laboratory Control Sample	

Refer to data assessment report.

Inorganic:

Y Data Completeness	Y Holding Time
Y Calibration, Initial	Y Calibration, Continuing
Y Laboratory Duplicate	Y Blanks
Y Laboratory Control Sample	

Comments: Refer to Data Assessment Narrative.

REGION II START V DATA ASSESSMENT REPORT

SITE: 738 Upper Mountain Road Site **SDG No.:** 160-36128-1

LAB: Eurofins TestAmerica, 13715 Rider Trail North, Earth City, MO 63045

ANALYSIS: Resource Conservation and Recovery Act (RCRA) Characteristics, Toxicity Characteristic Leaching Procedure (TCLP) Herbicides.

No. of Samples/Matrix: 2 Soil

CONTRACTOR: Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V)

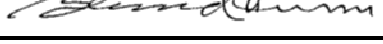
The following table summarizes the analytical methods used for the requested analyses and the U.S. Environmental Protection Agency, Region II (EPA), data validation standard operating procedures (SOPs) used for data validation.

Analysis	Analytical Method	Data Validation SOP No.
Herbicides TCLP Herbicides	SW-846 Method 8151A	SOP No. HW-17 (Revision 3.1), December 2010
RCRA Characteristics	SW-846 Methods 9014, 9034, 1030, 9045	Laboratory provided QC criteria and analytical methods

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Smita Sumbaly **Date:** 6/1/2020

Verified By:  **Date:** 6/1/2020

On October 23, 2019, EPA Region II and START V sampling personnel collected two soil samples from the 738 Upper Mountain Road Site located at 738 Upper Mountain Road, Lewiston, Niagara County, New York. Within 24-hours of collection, samples were shipped by START V personnel to Eurofins TestAmerica (St. Louis) Laboratory located at 13715 Rider Trail North, Earth City, Missouri for RCRA characteristics and TCLP herbicides analyses. The laboratory verified that samples were received intact, properly sealed, and refrigerated. The temperatures of the cooler was recorded at 1.7 Degrees Celsius (°C).

Field Sample ID	Laboratory Sample ID	Matrix	Analysis*	Sampling Date
Report Number: 160-36128-1				
UMR001-DS01-0012-01	160-36128-3	Soil	RCRA Characteristics[1] and TCLP Herbicides	10/23/2019
UMR001-DS01-1224-01	160-36128-5	Soil	RCRA Characteristics[1] and TCLP Herbicides	10/23/2019

Analysis:

[1] RCRA characteristics include corrosivity as pH, ignitability, and reactivity (sulfide and cyanide).

Note: This assessment only cover the data validation for RCRA Characteristics and TCLP Herbicides. The radiological parameters listed in chain-of custody records were not included in this report, but were detailed in a separate report.

All data were reviewed for sample receipt conditions, holding times, calibrations, laboratory control sample recoveries, and potential blank contaminations, but only non-compliant quality control (QC) observations, if any, are discussed in detail in this report. Matrix Spike/Matrix Spike Duplicate (MS/MSD) and field duplicate samples were not collected.

DATA ASSESSMENT

ANALYSIS: TCLP Herbicide

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

TCLP Herbicide: Holding times were met.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

TCLP Herbicides:
In samples UMR001-DS01-0012-01 and UMR001-DS01-1224-01, the 2,4-Dichlorophenylacetic acid (DCPAA) surrogate recoveries in column 2 were above the laboratory established control limits. Since both samples were non-detect for herbicide analytes, no action was required.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

TCLP Herbicide: Not Applicable

4. LABORATORY CONTROL SAMPLE (LCS) and/or DUPLICATE (LCSD) RECOVERY:

TCLP Herbicides: The LCS/LCSD recoveries of 2,4-D and silvex (2,4,5-TP) on column 1 and 2 in associated LCS (460-651912/2-A & 3-A) were above the laboratory established control limits. Since 2,4-D and silvex (2,4,5-TP) were not detected in associate samples, no action was required.

5. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

TCLP Herbicides: Method blank was free of contaminants

B) Field or rinse blank contamination:

Not applicable

C) Trip blank contamination:

Not applicable

6. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and, to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is Bromofluorobenzene (BFB) and for semivolatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

TCLP Herbicides: Not Applicable.

7. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factors for the target analytes must meet the minimum requirements specified in Tables 4 of methods 8260C and 8270D in both initial and continuing calibrations. A value less than the minimum requirement indicate a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

TCLP Herbicides: None required qualifications.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

The % RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. The % RSD must be ≤20% for analytes to be quantified by using the average relative response factor (RRF). Otherwise a linear regression with a correlation coefficient of >0.99 must be used. The %D compares the response factor of the continuing calibration check to the average (RRF) from the initial calibration and %D must be ≤ 20%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly

exceed QC criteria, non-detects data may be qualified "R".

For the Herbicide fractions, if %RSD exceeds requirement in the SOPs for any analytes, or if the %D of calibration verification exceeds 15% for herbicides, qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

TCLP Herbicides: The %D for CCV 60-651980/1 on column 1 and CCV 460-651980/15 on column 1 and/or 2 exceeded criteria for 2,4-D and Silvex (2,4,5-TP). Using professional judgment, non-detect results for 2,4-D and silvex (2,4,5-TP) were estimated (UJ) in samples UMR001-DS01-0012-01 and UMR001-DS01-1224-01.

8. COMPOUND IDENTIFICATION:

A) Herbicide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the herbicide concentration exceeds 10 ug/mL in the final sample extract.

TCLP Herbicides were not detected in any samples.

9. FIELD DUPLICATES:

TCLP Herbicides: Not Applicable

10. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

TCLP Herbicides: None required.

11. OTHERS:

Herbicides: Due to non-compliant LCS/LCSD results, the laboratory qualified the associated analyte with * qualifier on Form Is. The data reviewer removed the * qualifier from the Form I and initialed the changes.

ANALYSES
RCRA Characteristics

Two soil samples were submitted for screening data. Laboratory performed the Method Blank analysis, LCS recoveries, MS/MSD recovery, and Laboratory Duplicate analysis. All method blank results were within QC criteria [less than (<) MDL]. Relative Percent Difference (RPD) values for duplicate analysis fall within + 20% and LCS recoveries were within laboratory established QC limits. Initial and Continuing Calibration Verification (CCV) recoveries were within the control limits. All Initial and Continuing Calibration Blank results were within QC criteria <MDL. All samples were analyzed within holding times except pH. All QC results were

evaluated, but only non-compliant QC observations, if any, are discussed in detail in this report. MS/MSD was performed on different batch of sample and recoveries were outside the QC limits, no actions were taken.

- Sample Preservation
- Holding Time
- Initial Calibration
- Initial Calibration Verification (including Initial Calibration Blank)
- Continuing Calibration Verification (including Continuing Calibration Blank)
- Laboratory Duplicate
- Laboratory Control Sample

The analyses were validated based on the Analytical Methods and laboratory SOP.

Temperature: The shipping cooler temperature of the cooler was recorded at 1.7 upon receipt at the laboratory. Sample temperature was in compliance.

1. RCRA Characteristics:

A) Reactive Cyanide: Both soil samples concentrations for Reactive Cyanide were reported below the MDL.

B) Reactive Sulfide: Both soil samples concentrations for Reactive Sulfide were reported below the MDL.

B) Corrosivity (as pH): Both soil samples for pH/Corrosivity were reported as 8.6 pH unit.

C) Ignitability: Both soil samples were reported as <2.20 millimeter/second (mm/sec).

2. HOLDING TIME:

Corrosivity as pH: Both soil samples were qualified as estimated "J" due to exceeding holding time criteria: Samples were collected on October 23, 2019 and analyzed on November 3, 2019.

Corrosivity as pH was therefore qualified "J" for samples UMR001-DS01-0012-01 and UMR001-DS01-1224-01.

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):

MS/MSD analysis was not requested but laboratory performed MS/MSD on different batch of samples. No action was required based on MS/MSD recoveries.

5. DUPLICATE SAMPLE ANALYSIS:

Ignitability, Cyanide, Reactive, and Corrosivity as pH: Different batch of sample was used for duplicate analysis which yielded comparable results.

6. FIELD DUPLICATE:

Not Applicable

7. OTHERS:

pH: Due to holding time non-compliance, the laboratory qualified the associated analyte with HF qualifier. The data reviewer removed the HF qualifier from the Form I and initialed the changes.

OTHER ANALYTES WORK TABLE

PROJECT: 738 Upper Mountain Road Site

SAMPLING DATE: October 23, 2019

General Parameters	MATRIX	Soil	Soil
	CLIENT ID No.	UMR001-DS01-0012-01	UMR001-DS01-1224-01
	LAB ID No.	160-36128-3	160-36128-5
	Rec. Cn/S (g)	10 g/50.0 mL	10 g/50.0 mL
	Percent Solids	NA	NA
	Dilution Factor	1.0	1.0
	MDL/Units		
Cyanide, Reactive	25.0 mg/Kg	25.0 U	25.0 U
Sulfide, Reactive	20.0 mg/Kg	20.0 U	20.0 U
Burn Rate	2.2 mm/Sec	2.20 U	2.20 U
pH	0.1 SU	**8.6 J**	**8.6 J**
Corrosivity	0.1 SU	**8.6 J**	**8.6 J**

MDL - Method Detection Limit
J - Estimated Value
mm/Sec - millimeter/second
SU - Standard Unit
mg/Kg - milligram per kilogram
Bold result-detected value
Results reported to the Reporting Limit

OTHER ANALYTES WORK TABLE

PROJECT: 738 Upper Mountain Road Site

SAMPLING DATE: October 23, 2019

SAMPLE #/CONCENTRATION (mg/L)

TCLP Compounds	MATRIX: / Client ID# / Lab ID #	Soil UMR001-DS01-0012-01 160-36128-3	Soil UMR001-DS01-1224-01 160-36128-5
	Dilution Factor	1.0	1.0
TCLP Herbicides	Requlatory Limit		
2,4-D	10	0.083 UJ	0.083 UJ
2,4,5-TP (Silvex)	1	0.083 UJ	0.083 UJ

U - not-detected/ UJ - estimated the non-detected results

J - estimated value

Note: - Results reported at the reporting limit (RL) on the Form Is for the soil matrix have been adjusted to reflect the sample dilution factors.

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ANALYTICAL REPORT

Job Number: 160-36128-1

Job Description: EPA RST2 - RFP No. 612

For:
Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837

Attention: Ms. Smita Sumbaly

Rhonda Ridenhower

Approved for release.
Rhonda E Ridenhower
Manager of Project Management
11/15/2019 5:04 PM

Rhonda E Ridenhower, Manager of Project Management
13715 Rider Trail North, Earth City, MO, 63045
rhonda.ridenhower@testamericainc.com
11/15/2019

cc: Bernard Nwosu

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. Pursuant to NELAP, this report shall not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager.

Louisiana Lab Certification ID (Non-Potable, Solid/Haz. Material): 106151
Florida Lab Certification ID (Drinking Water): E87689.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Weston Solutions, Inc.

Project: EPA RST2 - RFP No. 612

Report Number: 160-36128-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, St. Louis attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results for Chemistry analyses are reported on an ""as received"" basis unless otherwise indicated by the presence of a % solids value in the method header. All soil/sediment sample results for radiochemistry analyses are based upon sample as dried and disaggregated with the exception of tritium, carbon-14, and iodine-129 by gamma spectroscopy unless requested as wet weight by the client."

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Manual Integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure. Detailed information can be found in the raw data section of the level IV report.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/24/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.7 C. Radiochemistry results will be reported in job series 2.

Receipt Exceptions: Sample UMR001-DS01-0012-02 was received broken and samples were compromised. Per the client request, QC was canceled on sample UMR001-DS01-0012-01 and that sample was used to perform analyses requested for sample UMR001-DS01-0012-02

Sample UMR001-DS01-1224-01 was received with container broken, Sample was saved and transferred to a new container.
Sample CF001-COMP01-01 was received with 1 of 2 containers broken, Sample was saved and transferred to a new container.
UMR001-DS01-1224-01 was received broken, Sample was saved and transferred to a new container.

TCLP CHLORINATED HERBICIDES

Samples UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for TCLP chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were leached on 10/30/2019, prepared on 10/31/2019 and analyzed on 11/01/2019.

The 2,4-Dichlorophenylacetic acid surrogate recovery for the following samples was outside acceptance limits (high biased) on the primary column due to matrix interference: UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

The 2,4-Dichlorophenylacetic acid surrogate recovery for the following sample, MB, LCS, LCSD and LB were outside acceptance limits (high biased) on the primary column due to matrix interference: (LB 460-651573/1-F), (LCS 460-651912/2-A), (LCSD 460-651912/3-A) and (MB 460-651912/1-A). The recovery is within acceptance limits on the other column, indicating that the extraction process was in control.

The continuing calibration verification (CCV) associated with batch 460-651980 recovered above the upper control limit for multiple analytes on the primary column and 2,4-Dichlorophenylacetic acid on the secondary column. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The closing continuing calibration verification (CCVC) associated with batch 460-651980 recovered above the upper control limit for multiple analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 460-651912 and analytical batch 460-651980 recovered outside control limits for multiple analytes. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ICP-MS

Samples CF001-COMP01-01 (160-36128-1), CF001-COMP01-02 (160-36128-2), UMR001-DS01-0012-01 (160-36128-3), UMR001-DS01-0012-02 (160-36128-4) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for ICP-MS in accordance with EPA SW-846 Method 6020A. The samples were prepared on 11/08/2019 and analyzed on 11/11/2019.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-449573 and analytical batch 160-449843 were outside control limits for Thorium. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.CF001-COMP01-01 (160-36128-1[MS]) and CF001-COMP01-01 (160-36128-1[MSD])

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP/MS), ISOTOPIC URANIUM CONCENTRATION

Samples CF001-COMP01-01 (160-36128-1), CF001-COMP01-02 (160-36128-2), UMR001-DS01-0012-01 (160-36128-3), UMR001-DS01-0012-02 (160-36128-4) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for Metals (ICP/MS), Isotopic Uranium Conc. in accordance with 6020A. The samples were prepared on 11/08/2019 and analyzed on 11/12/2019.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-449572 and analytical batch 160-449911 were outside control limits for U234 and U235 . Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.CF001-COMP01-01 (160-36128-1[MS]) and CF001-COMP01-01 (160-36128-1[MSD])

The matrix spike / matrix spike duplicate (MS/MSD) recovery and precision for preparation batch 160-449572 and analytical batch 160-449911 was outside control limits for U238. Sample matrix interference is suspected. CF001-COMP01-01 (160-36128-1[MS]) and CF001-COMP01-01 (160-36128-1[MSD])

The low level check standard (CRI) recovery associated with batch 160-449911 is outside the acceptance criteria for the following analyte(s): U238. The concentration of this analyte(s) in the sample was at such a high level as to make quantification of a check standard at the reporting limit unnecessary (CRI 160-449911/8)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

FLASHPOINT

Samples UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for flashpoint in accordance with EPA SW-846 Method 1030. The samples were analyzed on 11/03/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE CYANIDE

Samples UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for reactive cyanide in accordance with EPA SW-846 Method 9014. The samples were prepared and analyzed on 11/01/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REACTIVE SULFIDE

Samples UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for reactive sulfide in accordance with EPA SW-846 Method 7.3.4. The samples were prepared and analyzed on 11/01/2019.

Sulfide, Reactive failed the recovery criteria low for the MS/MSD of sample 460-195297-1 in batch 460-652145.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH
Samples UMR001-DS01-0012-01 (160-36128-3) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for pH in accordance with EPA SW-846 Method 9045D. The samples were analyzed on 11/03/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS
Samples CF001-COMP01-01 (160-36128-1), CF001-COMP01-02 (160-36128-2), UMR001-DS01-0012-01 (160-36128-3), UMR001-DS01-0012-02 (160-36128-4) and UMR001-DS01-1224-01 (160-36128-5) were analyzed for percent solids in accordance with EPA Method 160.3 MOD. The samples were analyzed on 10/24/2019 and 10/27/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Accreditation/Certification Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 612

Job ID: 160-36128-1

Laboratory: Eurofins TestAmerica, St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3050_Dissol	Solid	U-233
6020A	3050_Dissol	Solid	U-234
6020A	3050_Dissol	Solid	U-235
6020A	3050_Dissol	Solid	U-236
6020A	3050_Dissol	Solid	U-238
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

New York	NELAP	11616	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3050_Dissol	Solid	Thorium
6020A	3050_Dissol	Solid	U-233
6020A	3050_Dissol	Solid	U-234
6020A	3050_Dissol	Solid	U-235
6020A	3050_Dissol	Solid	U-236
6020A	3050_Dissol	Solid	U-238
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Laboratory: Eurofins TestAmerica, Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11452	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9014	7.3.3	Solid	Cyanide, Reactive
9034	7.3.4	Solid	Sulfide, Reactive

Method Summary

Client: Weston Solutions, Inc.
Project/Site: EPA RST2 - RFP No. 612

Job ID: 160-36128-1

Method	Method Description	Protocol	Laboratory
8151A	Herbicides (GC)	SW846	TAL EDI
6020A	Metals (ICP/MS)	SW846	TAL SL
6020A	Metals (ICP/MS), Isotopic Uranium	SW846	TAL SL
1030	Ignitability, Solids	SW846	TAL EDI
9014	Cyanide, Reactive	SW846	TAL EDI
9034	Sulfide, Reactive	SW846	TAL EDI
9045D	pH	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL SL
1311	TCLP Extraction	SW846	TAL EDI
3050_Dissol	Preparation, Total Dissolution	SW846	TAL SL
7.3.3	Cyanide, Reactive	SW846	TAL EDI
7.3.4	Sulfide, Reactive	SW846	TAL EDI
8151A	Extraction (Herbicides)	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG No.:

Client Sample ID: UMR001-DS01-0012-01 Lab Sample ID: 160-36128-3

Matrix: Solid (TCLP) Lab File ID: 1F458987.D

Analysis Method: 8151A Date Collected: 10/23/2019 12:20

Extraction Method: 8151A Date Extracted: 10/31/2019 22:52

Sample wt/vol: 15(mL) Date Analyzed: 11/01/2019 09:05

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: DB-5 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 651980 Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	158	X	30-150

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG No.:

Client Sample ID: UMR001-DS01-0012-01 Lab Sample ID: 160-36128-3

Matrix: Solid (TCLP) Lab File ID: 1F458987.D

Analysis Method: 8151A Date Collected: 10/23/2019 12:20

Extraction Method: 8151A Date Extracted: 10/31/2019 22:52

Sample wt/vol: 15(mL) Date Analyzed: 11/01/2019 09:05

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: DB-608 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 651980 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	* J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	* J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	74		30-150

5/20/2020

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG No.:

Client Sample ID: UMR001-DS01-1224-01 Lab Sample ID: 160-36128-5

Matrix: Solid (TCLP) Lab File ID: 1F458988.D

Analysis Method: 8151A Date Collected: 10/23/2019 13:00

Extraction Method: 8151A Date Extracted: 10/31/2019 22:52

Sample wt/vol: 15(mL) Date Analyzed: 11/01/2019 09:19

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: DB-5 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 651980 Units: mg/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	166	X	30-150

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG No.:

Client Sample ID: UMR001-DS01-1224-01 Lab Sample ID: 160-36128-5

Matrix: Solid (TCLP) Lab File ID: 1F458988.D

Analysis Method: 8151A Date Collected: 10/23/2019 13:00

Extraction Method: 8151A Date Extracted: 10/31/2019 22:52

Sample wt/vol: 15(mL) Date Analyzed: 11/01/2019 09:19

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: DB-608 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 651980 Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	RL
94-75-7	2,4-D	ND	J	0.083	0.083
93-72-1	Silvex (2,4,5-TP)	ND	J	0.083	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	74		30-150

EZ 5/20/2020

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job Number: 160-36128-1

SDG No.:

Project: EPA RST2 - RFP No. 612

Client Sample ID	Lab Sample ID
UMR001-DS01-0012-01	160-36128-3
UMR001-DS01-1224-01	160-36128-5

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: UMR001-DS01-0012-01
Lab Sample ID: 160-36128-3
Lab Name: Eurofins TestAmerica, Edison
Job No.: 160-36128-1
SDG ID.:
Matrix: Solid
Date Sampled: 10/23/2019 12:20
Reporting Basis: WET
Date Received: 10/24/2019 13:48

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	8.6			SU		HF	1	9045D
	Corrosivity	8.6			SU		HF	1	9045D

5/20/2020

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: UMR001-DS01-0012-01 Lab Sample ID: 160-36128-3

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG ID.:

Matrix: Solid Date Sampled: 10/23/2019 12:20

Reporting Basis: WET Date Received: 10/24/2019 13:48

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: UMR001-DS01-1224-01 Lab Sample ID: 160-36128-5

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG ID.:

Matrix: Solid Date Sampled: 10/23/2019 13:00

Reporting Basis: WET Date Received: 10/24/2019 13:48

CAS No.	Analyte	Result			Units	C	Q	DIL	Method
	pH	8.6	J		SU		HF	1	9045D
	Corrosivity	8.6	J		SU		HF	1	9045D

5/20/2020

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: UMR001-DS01-1224-01 Lab Sample ID: 160-36128-5

Lab Name: Eurofins TestAmerica, Edison Job No.: 160-36128-1

SDG ID.:

Matrix: Solid Date Sampled: 10/23/2019 13:00

Reporting Basis: WET Date Received: 10/24/2019 13:48

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
	Cyanide, Reactive	ND	25		mg/Kg			1	9014
	Sulfide, Reactive	ND	20		mg/Kg			1	9034
	Burn Rate	ND	2.20		mm/sec			1	1030

Weston Solutions, Inc.
DateShipped: 10/23/2019
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Case #: 612
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-102319-0032-0040-003
Lab: Eurofins TestAmerica Laboratories
Lab Contact: Mike Franks
Lab Phone: (314) 787-8201

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
	CF001-COMP01-01	CF001-COMP01		A	Gamma/Alpha/ICPMS	Soil	10/22/2019	15:50	2	16 oz	4 C	Y
	CF001-COMP01-02	CF001-COMP01		A	Gamma/Alpha/ICPMS	Soil	10/22/2019	15:55	1	16 oz	4 C	N
	UMR001-DS01-0012-01	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	12:20	2	16 oz	4 C	Y
	UMR001-DS01-0012-01	UMR001-DS01		B	RCRA Characteristics	Soil	10/23/2019	12:20	1	8 oz	4 C	N
	UMR001-DS01-0012-01	UMR001-DS01		C	TCLP Herbicides	Soil	10/23/2019	12:20	1	8 oz	4 C	N
	UMR001-DS01-0012-02	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	12:25	1	16 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		A	Gamma/Alpha/ICPMS	Soil	10/23/2019	13:00	1	16 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		B	RCRA Characteristics	Soil	10/23/2019	13:00	1	8 oz	4 C	N
	UMR001-DS01-1224-01	UMR001-DS01		C	TCLP Herbicides	Soil	10/23/2019	13:00	1	8 oz	4 C	N

Special Instructions: Analyze radiologicalsamples for gamma spectroscopy for Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain, Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain, other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 day ingrowth, and alpha spectroscopy for U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and Daly.Eric@epa.gov

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples	Weston START V	10/23/19 18:00	TAS FL	10-24-19/0930	GOOD

160-36128 Chain of Custody